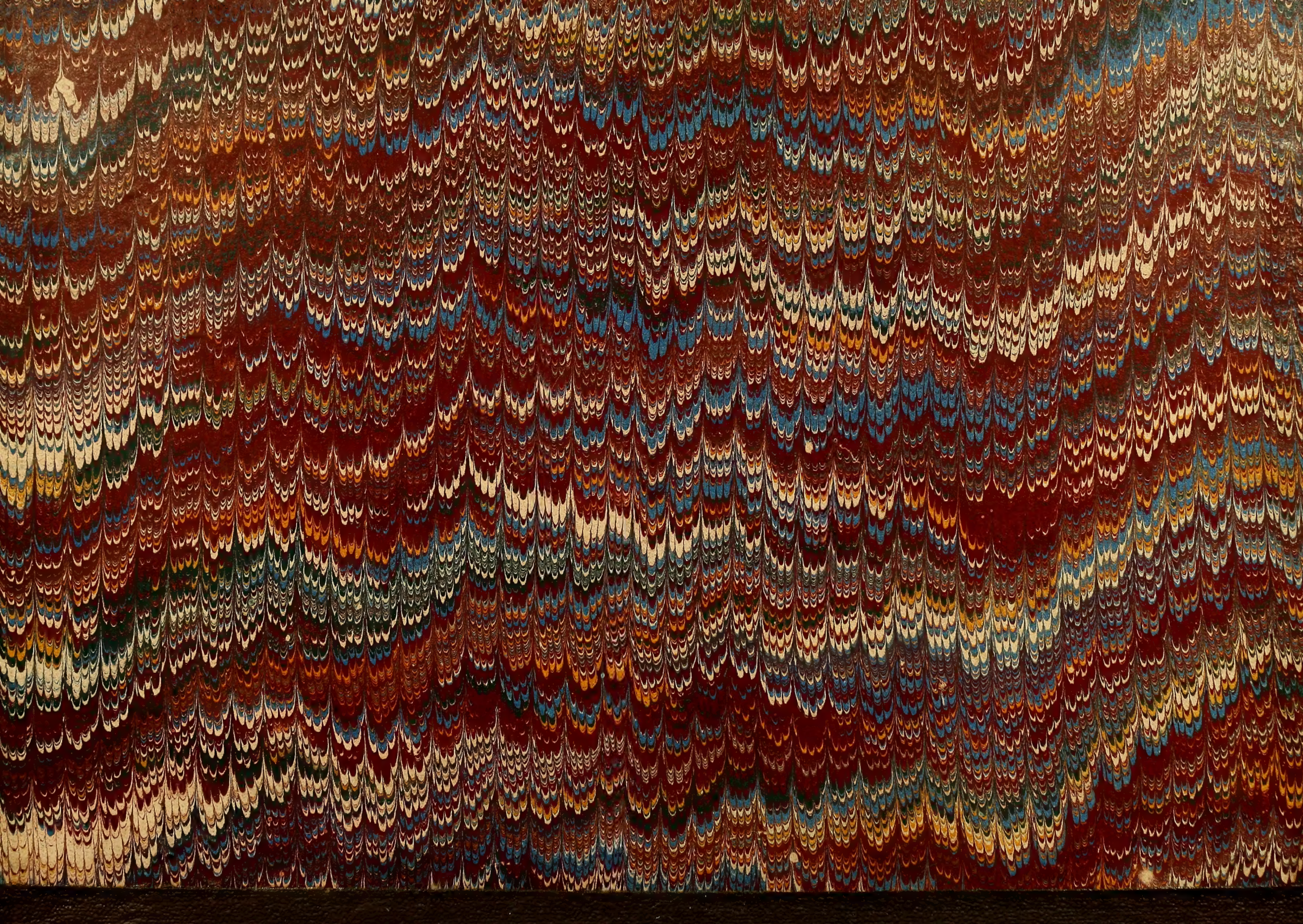




# A HISTORY

OF

# THE BIRDS OF EUROPE,

INCLUDING ALL THE SPECIES INHABITING THE

## WESTERN PALÆARCTIC REGION.

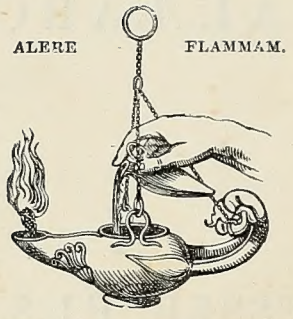
BY

H. E. DRESSER, F.L.S., F.Z.S., ETC.

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# A HISTORY OF THE BIRDS OF EUROPE



BY

HENRY E. DRESSER, F.L.S., F.Z.S., ETC.

VOLUME VII.

CONTAINING:—

COLUMBÆ. GALLINÆ. GRALLÆ. OTIDÆ.
ŒDICNEMIDÆ. GLAREOLIDÆ. CHARADRIIDÆ.
SCOLOPACIDÆ (to Gallinago).

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## Subclass SCHIZOGNATHÆ.

# Order I. COLUMBÆ.

## Family COLUMBIDÆ.

### Genus COLUMBA.

*Columba*, Linnæus, Syst. Nat. i. p. 282 (1766).
*Palumbus* apud Kaup, Natürl. Syst. p. 107 (1829).
*Palumbæna* apud Bonaparte, Cat. Parzud. p. 9 (1856).
*Trocaza* apud Bonaparte, Compt. Rend. xliii. p. 837 (1856).

The Pigeons must decidedly be ranged near the Gallinaceous birds, though some authors have placed them in quite distinct divisions and apart. Sundevall (who divides our birds into two large groups—the one, which he terms Gymnopædes, containing all those which are, when hatched, naked and helpless, and the other, called by him Dasypædes, embracing those which are covered with down on emerging from the egg and are more or less able to take care of themselves) places the Pigeons amongst the Gymnopædes, separating them from the Gallinæ by the Accipitres. In Professor Huxley's classification, which I have followed as nearly as possible, the Pigeons, together with their close allies the Sand-Grouse, form the first order of the Schizognathæ, being followed by the Gallinæ—a position which is clearly the most natural one for them.

The Pigeons inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, six species being found in the Western Palæarctic Region. They inhabit both open and wooded localities, and the mountains as well as the plains, according as they find an abundance of food. They have a strong, swift, and protracted flight; walk with ease, taking short steps, sometimes running quite fast. Their note is a deep *coo*; and both sexes utter this note. They nestle on trees or bushes, amongst the rocks, and even on the ground, and deposit two pure-white elliptical eggs. The young birds, when first hatched, are nearly naked, being covered but sparingly with thin, soft down, are quite unable to do any thing for themselves, and are fed with vegetable substances softened in the crop of the old birds, and which the parent birds introduce into the mouths of their young with their bills.

The food of the Pigeons consists entirely of vegetable substances of various kinds; and they drink very regularly, usually early in the morning and late in the evening.

*Columba livia*, the type of the genus, has the bill rather short, straight, slender, the upper mandible having at the base two soft tumid bare substances over the nostrils; culmen depressed towards the tip, which is obtuse, but thin-edged; nostrils linear, placed in the lower anterior portion of the nasal membrane; wings long, full, the second quill longest; tail moderate, slightly rounded; legs short, strong; tarsus anteriorly scutellate, posteriorly scurfy; toes moderate, scutellate; claws short, compressed, arched, rather acute; œsophagus dilated and expanded into a large two-lobed crop, below which it narrows.



J.G.Keulemans lith.

Hanhart imp.

RING-DOVE.
COLUMBA PALUMBUS.

# COLUMBA PALUMBUS.

(RING-DOVE.)

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*Columba palumbus*, Briss. Orn. i. p. 89 (1760).
*Columba palumbus*, Linn. Syst. Nat. i. p. 282 (1766).
*Columba palumbes*, Pall. Zoogr. Rosso-As. i. p. 563 (1811).
*Columba torquata*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 26 (1816).
*Palumbus*, Kaup (*Columba palumbus*, L.), Natürl. Syst. p. 107 (1829).
*Columba pinetorum*, C. L. Brehm, Vög. Deutschl. p. 488 (1831).
*Palumbus torquatus* (Leach), Bp. Cat. Parzud. p. 9 (1856).
*Columba trocaz*, Morel. Hist. Nat. Açor. p. 84 (1860, nec Heine).
*Palumbus excelsus*, Bp. Compt. Rend. xliii. p. 836 (1856).

*Colombe ramier*, French; *Pombo trocaz*, Portuguese; *Paloma torcaz*, Spanish; *Colombaccio*, Italian; *Tudun*, Maltese; *Kamoor*, Moorish; *Ringeltaube*, *Holztaube*, German; *Ringduif*, Dutch; *Ringeldue*, Danish; *Digva*, Færoese; *Ringdue*, Norwegian; *Ringdufva*, Swedish; *Kauluskyyhky*, Finnish; *Lesnoi-Golub*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 316; Werner, Atlas, *Pigeons*, pl. 1; Kjærb. Orn. Dan. taf. 28; Fritsch, Vög. Eur. taf. 29. fig. 3; Naumann, Vög. Deutschl. taf. 149; Sundevall, Svensk. Fogl. pl. 31. fig. 2; Gould, B. of Eur. pl. 243; id. B. of G. Brit. iv. pl. 1; Schlegel, Vog. Nederl. pl. 183; Bettoni, Ucc. Lomb. pl. 18.

*Ad.* capite et collo superiore saturatè cæruleo-cinereis, capitis lateribus purpureo et violaceo nitentibus, collo maculâ utrinque albâ notato; corpore suprà fusco-cæruleo: remigibus primariis nigricantibus, extùs albo marginatis: tectricibus alarum cæruleo-cinereis, sed tectricibus primariorum majoribus et minoribus albis, alulâ spuriâ nigrâ, secundariis dorso concoloribus: caudâ versus basin cæruleo-cinereâ, versus apicem nigrâ: collo antico et pectore vinaceis, abdomine pallidiore: supracaudalibus, subcaudalibus, subalaribus et uropygio cinereo-cæruleis: rostro ad basin rubro, versus apicem flavo: iride flavâ: pedibus incarnatis.

*Juv.* adulto similis sed coloribus sordidioribus, maculâ nullâ in lateribus colli.

*Adult Male* (Kent, March). Head and upper neck dark dove-blue, sides of the neck richly glossed with violet and purple, each side marked with a large white patch, which nearly meet behind the neck; back dark slaty-brownish ash; wing-coverts dull dark bluish, but a long patch on the outer part of the wing is pure white; primary quills black, externally edged with white; secondaries coloured like the back, but rather darker; wing-coverts, along the edge of the wing, and spurious wing slaty black; lower back, rump, and upper tail-coverts rich dove-blue; base of the tail rather darker, and the terminal half of the tail black; lower throat, breast, and upper abdomen rich vinous, gradually

becoming paler on the abdomen, and on the lower abdomen merging into pale dove-blue; lower flanks, under wing-coverts, and under tail-coverts dove-blue; bill bright red at the base, and becoming yellow towards the tip; iris straw-yellow; legs coral-red. Total length about 16·5–17 inches, culmen 1·05, wing 9·4, tail 6·5, tarsus 1·2.

*Adult Female.* Closely resembles the male, but is a trifle smaller in size, and the patch on the sides of the neck is smaller, the vinous coloration of the breast being a trifle paler.

*Young.* Differs from the adult in being duller and paler in coloration, in lacking the white patches on the sides of the neck, and in having the bill dull red at the base, and greyish towards the tip.

The present species is generally distributed throughout Europe, except in the more boreal districts, but does not range far into Asia, being there replaced by a closely allied species, *Columba casiotis*. Southward it is found as far as North Africa, but does not range further south in that continent, and is not recorded from the east side of North Africa.

With us in Great Britain it is common and generally distributed, having increased largely in numbers, it would seem, during the last few years. It is found with us at all seasons of the year, and in some parts of the country is so numerous in the winter and spring as to do great damage to the agriculturist. Mr. Cecil Smith writes to me, "In Somersetshire it is a resident and mischievously numerous, being greatly on the increase. The capacity of the Wood-Pigeon for food seems unlimited, as I have taken from the crop of a single individual as many as seventy-seven beech-masts and one large acorn: this immense quantity of food was in the crop only; the gizzard, in this case, I did not examine. Luckily for the Guernsey farmers the Wood-Pigeon is by no means a very common bird in the island, though its numbers are occasionally increased by migratory flocks, especially in the autumn." The same increase in numbers is observable in many other parts of England, and especially on the east coast. Mr. Cordeaux writes of it (B. of Humb. Distr. p. 76):—"Is much more numerous than formerly, having greatly increased during the last ten years. Collects in immense flocks in the autumn, and in sharp weather resorts to the cabbage- and turnip-fields to feed on the leaves of these plants. In severe winters with much frost and snow, the ranks of our local birds probably receive considerable accessions, either from the north or the continent, as I have observed they are invariably, at least in this neighbourhood, much more numerous in a severe than in an open winter.

"Wood-Pigeons are remarkably partial to salt water, and will daily during the summer quarter resort to those drains in the marsh to which the tide has access, to drink the salt water."

In Scotland the present species breeds throughout the country, its numbers being largely augmented during the winter by migratory flocks, which probably, as is generally supposed by the farmers on the east coast, come from Scandinavia. When in Haddingtonshire quite lately I saw large numbers of Ring-Doves, and was told that these migratory flocks are sometimes so numerous as to cause most serious injury to the farmers. Mr. Robert Gray, writing on this subject, says (B. of W. of Scotl. p. 216), "That a large yearly accession to the winter flocks takes place through migration is, I think, evident from the fact that the eastern counties only are affected by the increase, and that, looking to the destruction of so many hundreds in one year, no such increase can reasonably be traced to the results of a single breeding-season. Many years

ago, indeed, I am informed by Mr. Alexander Henderson, an observant bird-student resident in East Lothian, he had repeatedly seen considerable flocks of Wood-Pigeons alighting on the coast near his house, evidently in a state of exhaustion. These birds, he remarked, were smaller and darker in plumage than those hatched in the neighbouring woods; and he was convinced at the time of their appearance that they were migrants from other countries. Very soon after this information was communicated to me, I witnessed a still more extraordinary instance of foreign invasion, on the sea-shore about three miles east of Dunbar. I had gone out about daybreak, and was astonished to see a prodigious cloud of Pigeons fully a mile seawards, steering for the nearest land. The entire body of birds alighted on the sandy beach at Catcrag Bay, which they completely covered between the rocks near the limestone quarry and the opposite point in the direction of the town. I am satisfied there must have been in the flock twenty or thirty thousand Pigeons at the lowest computation; and, from the fact of their alighting immediately on reaching land without any preliminary survey of the ground, I concluded they had come in from a long journey. Their tameness on my approach confirmed this conjecture, as I was allowed to put them up within twelve or fifteen yards. The cloud slowly ascended; and a line was formed, six or eight birds deep, which gradually drew off the main body, forming a singular spectacle when viewed against the morning sky, and almost realizing the descriptions of Wilson and Audubon when writing of the Passenger Pigeon of North America and its 'five-mile' processions in the air." In the same work (p. 217) Mr. Gray writes as follows:—"Throughout the western counties of Scotland the Wood-Pigeon, though very numerous and apparently on the increase, is by no means so abundant as in the eastern districts. It is plentiful in Islay, where it was introduced by the late Mr. Campbell, proprietor of the island. It is found in Mull, Sky, Inverness, Ross, and Sutherlandshire; but westward of the inner islands it ranks only as a straggler. A few are occasionally seen in spring and autumn in Benbecula and South Uist, but they do not remain.

"During the autumn and winter months the Ring-Dove, as this beautiful bird is also called, feeds chiefly upon the seeds of wild mustard, chickweed, roots of ranunculus or crowfoot, ivy-berries, oak-'spangle,' berries of the hawthorn and holly, and various other fruits and seeds. I remember many years ago shooting great numbers in a garden at Dunbar, where their plundering visits to the gooseberry-bushes were a source of constant annoyance. Each Pigeon must have consumed a large quantity daily, as I found the crops of those I killed quite distended with gooseberries. Beech-nuts are also a favourite food, judging from the immense quantities devoured. From newspaper paragraphs now before me, I learn that in the crop of one bird shot in East Lothian 272 beech-nuts were found; and that in another, shot by Mr. Joseph Sadler, at Alyth, in Forfarshire, there were found 1020 grains of corn! Mr. James S. Dixon, of Glasgow, who has for some years taken notes on the food of this species, informs me that he has many times been interested in watching a flock of Wood-Pigeons traversing a grass-field, and eagerly picking off the seeds of the common buttercup, which they appeared to swallow with avidity." In the north of Scotland the Ring-Dove becomes scarcer, but it is by no means uncommon in Sutherland. Mr. J. A. Harvie-Brown says that it is "plentiful like other sylvan species at Rosehall, between that and Bonar Bridge, and in the east generally. In 1834 Mr. Selby observed it as far north as Tongue, where it breeds in the plantations and birch-

woods about the base of Ben Laoghal; but he adds, "a few pairs only were seen during our excursion. Now it is more plentiful at Tongue; but in the west only occasional pairs are seen at rare intervals, spying out, no doubt, the nakedness of the land. In the spring of 1869 one pair frequented a small patch of birch-wood close to Loch Assynt; and I observed them feeding in the fields around for a few days; but they soon took their departure, probably to return to the better-wooded slopes of the Kyle, at Rosehall." In Shetland, Dr. Saxby says, "though formerly seen at long and irregular intervals, it now appears every spring and autumn, though in small numbers, more than two seldom being observed at one time in the same locality. Those which visit the islands are mostly adult birds; they are apparently fatigued and desirous of resting immediately after their arrival—but are nevertheless, in general, shy and watchful as elsewhere, only approaching the gardens at dusk for the purpose of roosting, and keeping to the most open fields during the day. The only Wood-Pigeon I have seen arrived about the end of October 1864, and remained for many days. The bird was remarkably tame, and seemed greatly to wish to fraternize with the House-Pigeons, which, however, as soon as it appeared among them, always flew off in great alarm, dodging it as if it were a Hawk—a very singular fact; for they never take the slightest notice of the presence of the Rock-Dove amongst them."

In Ireland, as in England, it is very generally distributed; but it has not been met with in Iceland, and is of rare occurrence in the Færoes. Captain Feilden states that Herr Kreuser, of Eide, informed him that he saw several about Eide in the winter of 1871. Mr. H. C. Müller received one from Kalbak on the 1st June 1865; and in the middle of November 1868 many were seen, and several shot, at various places in the islands.

In Scandinavia the Ring-Dove is widely distributed up to about 65° N. lat. Mr. Robert Collett informs me that "it breeds in Norway commonly up to the frontiers of Nordland, but is less numerous about the coast than in the wooded portions of the interior. It is generally found in dense conifer-woods intermixed with a few deciduous trees, usually far from human habitations, being scarcely ever seen near houses or farm-buildings, as is so often the case in Continental Europe. It arrives in the commencement or towards the middle of April, and leaves about the middle of October. It breeds in May, frequently making use of a deserted crow's nest or that of a squirrel, but rarely building a new one for itself, in which case it constructs it of the finer twigs of the birch." In Sweden, Professor Sundevall writes, it is common, and breeds throughout the country, arriving early in April, occasionally late in March, and leaving in September or October. It appears to range northwards up to about 64° or 65° N. lat. Meves met with it at Åhre, in Jemtland, and on the Ångermanelf on the 20th July. Von Wright says (Finl. Fogl. p. 305) that it is common enough in Central and Southern Finland, but he is unaware how far north it ranges. He met with it in Idensalmi; and, according to Dr. Malmgren, it occurs and breeds in Kajana. In Russia it is found as far north as the White Sea; for Meves writes that he found it tolerably common in Onega Bay and near Archangel. Mr. Sabanäeff informs me that it is common in Central Russia, and is most numerous in the Smolensk Government. He found it in all wooded districts throughout the Perm Government, but especially numerous in the south. According to Mr. Taczanowski, it is common in summer in Poland, where it arrives early in April and remains until the end of October. Throughout North Germany it is generally distributed, and breeds in wooded localities not only far from houses but also close to habitations;

for Mr. Schalow states (J. f. O. 1876, p. 113) that it breeds regularly in the Thiergarten of Berlin, close to the Charlottenburger Chaussee, undisturbed by the constant traffic which passes there. According to Mr. Collin, it is the commonest of all the Pigeons which breed in Denmark, and is generally distributed in suitable localities. It usually arrives in March; and during mild seasons large numbers remain over winter. In Heligoland, Mr. Cordeaux writes (Ibis, 1875, p. 184), it "is common during both periods of migration, in flights more numerous in the autumn than in the spring, from five to ten or twenty in a flock. Time of migration from the end of March to the end of May, and from the latter part of September to the end of October." In Holland it is very common, being chiefly found during summer, arriving in April and leaving in September or October; but it not unfrequently remains there over winter. In Belgium it is common and resident; and in France it is found everywhere, in large flocks, on the double passage, but is nowhere so common, as a resident, as in the public gardens of Paris, where it is found eight months in the year in a state of semidomestication. M. Adrien Lacroix says that it occurs on passage in the French Pyrenees, nesting accidentally only in the Hautes Pyrénées and Pyrénées orientales; and in Portugal, according to Professor Barboza du Bocage, it is common. In Spain it is common in the winter; and some few breed there. Colonel Irby says that a few pairs breed in the cork-wood near Gibraltar and in other wooded districts in Southern Spain, but it is most abundant during the winter months. Von Homeyer observed it in the Balearic Isles, and says (J. f. O. 1862, p. 417) that a few pairs occur in the wooded districts of Majorca. In Savoy it is abundant on passage, more particularly in the autumn, and occurs also in summer, but very few remain over the winter; and in Italy it is chiefly to be met with on passage, though some few nest there, as also in Sicily and Sardinia. Mr. C. Bygrave Wharton found it not uncommon in Corsica during the winter, but noticed none in the spring; and Mr. C. A. Wright says (Ibis, 1864, p. 137) concerning it in Malta:—"Passes in April and May, and again in September, October, and November. Never seen in great numbers. Does not breed here, doubtless owing to the want of woodlands." In Southern Germany the Ring-Dove is a tolerably common and generally-distributed summer resident. Mr. Seidensacher informed me that it breeds throughout Styria in suitable localities; and Dr. Fritsch says that it is commoner in Bohemia than the Stock-Dove, arriving late in March, collecting in flocks in the autumn, and leaving the country in October. In the Carpathians, Count Casimir Wodzicki says, it is common as far up as the forest extends, and breeds twice in the season, some few pairs even rearing three broods in the year. Messrs. Danford and Harvie-Brown state (Ibis, 1875, p. 416) that it is common in Transylvania at some seasons, but they did not observe it when there in the summer; and in Turkey, according to Messrs. Elwes and Buckley (Ibis, 1870, p. 200), it is tolerably numerous in most parts of the country, but is never seen in large flocks. The bird found there is, they add, rather larger and darker than our British bird.

Dr. Krüper says that it winters in large numbers in Greece and Asia Minor, but only a few pairs remain to breed in the most lonely forests in the mountains, and nests have been taken on Mount Parnassus and the Veluchi. Very large flocks are seen at the foot of the Olympus in winter. Lord Lilford, who met with it in the Ionian Islands, writes (Ibis, 1860, p. 236) as follows:—"I noticed very large flocks of Wood-Pigeons near Phanari, in the plains through which the Acheron runs. This was in March 1857. I have occasionally seen a few in different

parts of Epirus during the winter months; but it is not abundant in that province. I never saw it in Corfu."

In Southern Russia it appears to be very common, especially on the east side of the Black Sea; and Professor von Nordmann states that in October there is one continuous stream of migration between Anapa and Trebizond, lasting for ten or fifteen days, and immense numbers are netted by the inhabitants. It is said to be common in Asia Minor in winter; but comparatively few breed there. Mr. Danford informs me that he found it common, in large flocks, at Gozna during December, and saw it at Anascha in March and April. Dr. Krüper says that he is unaware if any breed there. Referring to the occurrence of the present species in Palestine, Dr. Tristram writes (Ibis, 1868, p. 209) as follows:—"Of the Columbidæ, *Columba palumbus* is spread in countless myriads over the wooded parts of the country in winter. Never, even in the lowlands of Scotland, have I seen such flights as cover the forests of Gilead at that season. The flights of Passenger Pigeons in America alone can compare with them. The fellahin villagers of Gilead adopt a cruel yet simple device by which large numbers of Ring-Doves are taken in the season of migration. A bird is snared, its eyelids sewn up with thread, and then it is tied to a perch, and placed on a tree, where the spectacle of the captive vainly flapping its wings attracts a continuous crowd of its fellows, many of whom fall victims to the weapons of the fowlers, who are in ambush close by. It would be inexplicable how such multitudes of Pigeons can find a living in a comparatively uncultivated country, did we not know that all the Columbidæ feed greedily on the foliage of any species of leguminous plants, and that the clovers and *Astragali* are the characteristic flora of this country, coming into leaf in winter and withering in April and May, by which time all the Ring-Doves have left. Indeed I doubt whether any remain so late as May, though possibly a few linger in Carmel and the higher grounds near the coast."

There appears to be no undoubted instance of its occurrence in North-east Africa, though Von Heuglin says that he thinks he recollects seeing it at Alexandria; but it is not uncommon in North-west Africa. Loche says that it is resident in Algeria, in moderate numbers, in the forest of Boghar and other wooded districts, and is abundant on migration. Mr. Tyrwhitt Drake observed it in Morocco in March; and, according to Favier (*fide* Colonel Irby, Orn. Str. Gibr. p. 132), it is found near Tangier throughout the year; some are migratory, crossing to Europe in March and April. Colonel Irby himself says (*l. c.*):—"In some localities in Morocco the Wood-Pigeon positively swarms. In April, up a valley near the Foudak, to the south-west of that place, on the road between Tangier and Tetuan, it would have been easy to shoot a hundred in a day, they were in such numbers and so excessively tame. Two or three which we shot to eat, had their crops full of the tuberous root of some weed which had been ploughed up and was lying in quantities about the fallow fields. During the same month, about three years previously, I noticed considerable numbers about Larache; but there they were much more wild, though not so shy as in England or Andalucia." It has also been met with in the Azores; but Mr. Godman, who says (Nat. Hist. Az. p. 31) that he received two examples from the Azores, adds that it is only found in the eastern and central groups, and is most common in St. George's and Pico.

To the eastward the Ring-Dove does not extend far into Asia, indeed not much to the east of the Ural, being replaced by *Columba casiotis*, which is easily distinguishable by its buff neck-

patch. Specimens from Bagdad in the British Museum are referable to the present species; but near Shiraz, in Persia, Mr. Blanford only met with *Columba casiotis*.

In habits the Ring-Dove does not differ much from the Stock-Dove; but it is easily recognizable from that species by its larger size, longer tail, and more especially by the white markings on its wings. It is exceedingly shy, and well able to take care of itself; and when disturbed whilst perched on a branch it almost invariably flies out at the other side, thus placing the tree between itself and the intruder. It walks on the ground with ease, taking short dainty steps, and is there quite as cautious and wary as when perched in a tree. During the breeding-season it seems to be less gregarious than its allies, and breeds in scattered pairs; but at other seasons of the year it frequently collects in larger and smaller flocks, and seeks its food in the oak-forests, beech-woods, and on cultivated ground, frequently creating great devastation in the latter.

The note of the Ring-Dove is a deep *coo*, which is uttered by both sexes, but less frequently by the female than by the male, and is most often heard in the pairing-season, when the male bird is paying his addresses to his mate. It seldom coos whilst seated on the ground, and still more seldom when on the wing, but usually when perched on some tree-top. The male frequently rises from his perch high up into the air and circles down again, with extended wings and tail, to where his mate is waiting for his caresses. The Ring-Dove lives in strict monogamy; and great affection appears to exist between a pair when mated. Two broods are usually raised in the season, and perhaps in some instances three. The first eggs are deposited about the middle of April, and the second lot in June. The usual place selected for the purpose of nidification is on the edge of a wood; but the nest is often found in the middle of a dense forest, and not unfrequently in gardens surrounded by human habitations. Either an old nest of a Jay, a Crow, or a Squirrel is made use of, or else the bird constructs one for itself; in the latter case it is, as is usual with all the Pigeons, a very poor structure, consisting merely of a platform of twigs so loose that the eggs may be seen from below. Both birds assist in bringing together the materials; but the female appears to be the sole architect.

Two eggs are almost invariably deposited, the first soon after the nest is finished, and the second three days later; and incubation lasts about eighteen days. The eggs are pure white in colour, thin-shelled, elongated oval, and, compared with the size of the bird, are small, being but little larger than those of the Stock-Dove. When the young are hatched they are blind and very helpless; when about nine days old they get the use of their eyes, but are carefully fed by their parents, and remain in the nest until well able to fly.

The food of the present species consists of seeds of various kinds, buds, &c. It is very fond of the seeds of various conifers, of beech-nuts, grain of various kinds, rape-seed, linseed, turnip-seed, acorns, &c.; and tender fresh leaves of plants are often found in quantities in its crop. It also feeds on blueberries, gooseberries, and other fruits. Like the other Pigeons it goes regularly to drink, usually in the morning and in the evening; and there are drinking-places to which it regularly resorts.

In confinement the Ring-Dove does not seem to thrive well, though when taken from the nest and brought up it becomes tolerably tame. When captured old it is difficult to keep alive, and has to be crammed for some time, until by degrees it can be got to feed itself.

The specimen figured is an adult male from Kent, and is the bird above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Kent, April. *c, juv.* Leadenhall Market. *d*, ♂. Pisa, Italy, March 1864 (*H. Giglioli*).

*E Mus. Howard Saunders.*

*a*, *b*, ♂, c, ♀. Granada, April and May. *d*, ♂. Valencia, Spain, November 12th.

*E Mus. E. Hargitt.*

*a*, ♂, *b*, ♀. Inverness, June 2nd, 1869 (*E. Hargitt*).



Hanhart imp

ROCK DOVE.
COLUMBA LIVIA.

# COLUMBA LIVIA.

(ROCK-DOVE.)

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*Columba livia*, Briss. Orn. i. p. 82 (1760).
*Columba saxatilis*, Briss. tom. cit. p. 84 (1760).
*Columba œnas*, Linn. Syst. Nat. i. p. 279 (1766, partim).
?*Columba livia*, Gm. Syst. Nat. i. p. 769 (1788, ex Briss.).
*Columba saxatilis*, Gmel. ut suprà (1788, ex Briss.).
*Columba livia*, Bonnat. Tabl. Encycl. et Méthod. i. p. 227 (1790).
*Columba amaliæ*, C. L. Brehm, Vög. Deutschl. p. 491 (1831).
*Columba intermedia*, Strickl. Ann. & Mag. Nat. Hist. 1844, p. 39.
*Columba rupestris*, C. L. Brehm, Vögelfang, p. 256 (1855, nec Bp.).
*Columba elegans*, C. L. Brehm, ut suprà (1855).
*Columba glauconotos*, C. L. Brehm, ut suprà (1855).
*Columba unicolor*, C. L. Brehm, ut suprà (1855).
*Columba dubia*, C. L. Brehm, ut suprà (1855).
*Columba gymnocyclus*, G. R. Gray, List of B. in Brit. Mus. part iv. p. 28 (1856).
*Columba plumipes*, G. R. Gray, tom. cit. p. 29 (1856).
*Columba turricola*, Bp. Consp. Gen. Av. ii. p. 47 (1857).
*Columba schimperi*, Bp. ut suprà (1857).
?*Columba fusca*, Severtzoff, Turk. Jevotn. p. 68 (1873).
*Columba neglecta*, Hume, Lah. to Yark. p. 272 (1873).

*Caluman-fiadhaich*, Gaelic; *Colombe biset*, French; *Pomba*, Portuguese; *Zurita*, *Paloma brava*, Spanish; *Piccione selvatico*, Italian; *Hamiental gebel*, Maltese; *Hamam el Berri*, Moorish; *Feldtaube*, *Felsentaube*, German; *Blaadigva*, Færoese; *Klippe-due*, Norwegian; *Klipp-dufva*, Swedish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 510; Werner, Atlas, *Pigeons*, pl. 4; Kjærb. Orn. Dan. 2nd Suppl. taf. 4; Naumann, Vög. Deutschl. taf. 150; Sundevall, Svensk. Fogl. pl. 31. fig. 1; Gould, B. of Eur. pl. 245; id. B. of G. Brit. iv. pl. 3; Bettoni, Ucc. Lomb. pl. 80.

*Ad.* capite et collo saturatè schistaceo-cæruleo, hôc imo viridi nitente et in parte anticâ lateraliterque æneo purpureo lavato: dorso et tectricibus alarum minoribus cæruleo-canis, dorso imo cum uropygio albis: supracaudalibus et caudâ cæruleo-schistaceis, fasciis alarum duabus et caudæ apice nigris: remigibus sordidè schistaceis, versus apicem fusco tinctis, corpore subtùs saturatè cæruleo-canis: subalaribus et axillaribus albis: rostro rufescenti-fusco, membranâ narium tumidâ albo-cinereâ: iride aurantiacâ: pedibus rubris.

*Juv.* ubique sordidior, fasciis alarum minus distinctis, et collo vix viridi nitente.

*Adult Male* (Færoes). Head and neck dark slate-blue, the neck glossed all round with green, below which, on the fore part and sides of the neck, it is richly shot with coppery purple; back and lesser wing-coverts pale dove-blue; lower back and rump white; upper tail-coverts and basal portion of the tail slate-blue, the terminal portion of the tail black; quills dull pale slate-blue tinged with brown towards the tips; rest of the wings pale dove-blue crossed by two black bands; underparts dark dove-blue with a slaty tinge; under wing-coverts and axillaries white, the edge of the wing dove-blue; bill reddish brown; iris orange; legs reddish. Total length about 11 inches, culmen 0·8, wing 8·5, tail 4·6, tarsus 1·2.

*Adult Female* (Færoes). Resembles the male, but is rather smaller, and duller in general coloration.

*Young.* Very much duller in general coloration, and having the black bands on the wing less clearly defined than in the adult, and there is but little of the green gloss on the neck.

The present species, which, it is now almost universally admitted, is the stock from which all our tame varieties of the Pigeon have sprung, is tolerably widely distributed, being found, though locally, from Northern Scandinavia into Northern Africa, and to the eastward its range extends into China and Japan.

In Great Britain the Rock-Dove is tolerably common in suitable localities where there are high cliffs and heavy rocks, in the crannies and caves of which it can find shelter. Mr. A. G. More, speaking of its breeding-range in Great Britain, says (Ibis, 1865, p. 141):—"Commencing from the south of England, the Rock-Dove used to breed formerly at Purbeck (*Rev. H. Austin*); but there is no direct evidence of its having ever bred in the Isle of Wight.

"Mr. E. H. Rodd includes the Rock-Dove in his list as breeding occasionally in Cornwall. The Rev. M. A. Mathews has observed it building in the cliffs about Lynton. Mr. W. D. Crotch reports it as breeding in Somersetshire. The bird is said to be common in Gloucester and Monmouth.

"Sir W. Jardine gives Caldey Island as a locality; and Mr. Tracy marks the bird as breeding in Pembrokeshire. The Rev. H. Harpur Crewe has observed it breeding in Denbighshire; and there are probably several other localities in South and North Wales.

"Mr. J. F. Brockholes tells me that there is a colony at Beeston Castle, Cheshire, and that he once noticed a pair frequenting the high banks of the Mersey during the breeding-season. Mr. C. S. Gregson informs me that the Rock-Dove breeds at Whitbarrow Scar; and Mr. J. B. Hodgkinson has found its nest occasionally in Cumberland: it breeds also in the Isle of Man, as I learn from my obliging correspondent Mr. J. F. Crellin.

"On the east coast of England the Rock-Dove breeds only at Flamborough; it also breeds in a few rocky valleys or inland cliffs in Derby, York, Leicester, Stafford, Shropshire, and Somerset."

To this I may add that I have certainly seen the Rock-Dove in the Isle of Wight late in March; and, referring to its supposed occurrence in Somerset, Mr. Cecil Smith writes to me that he is "doubtful as to its being really an inhabitant of this county; I included it in my 'Birds of Somerset' on the authority of the Rev. M. A. Mathew, who told me that a colony had taken up their abode near Weston-super-Mare; and since then, in February 1871, I saw some Rock-Doves at a place called Uphill, not very far from Weston-super-Mare. I pointed these out

to a boatman who was with me, thinking that they were probably tame Pigeons; but he told me there were no Pigeons kept at Uphill, and that they lived in the rocks. Shortly after this I had a letter from a correspondent at Cheddar suggesting that some Pigeons he saw about the Cheddar cliffs were wild Rock-Doves; but I think it extremely probable that these, at all events, were escapes. I have never met with the Rock-Dove in Guernsey or the Channel Islands. Professor Ansted, however, mentions it in his list as being found in Guernsey and Sark; but I am very doubtful about this."

As above stated, the Rock-Dove breeds in some numbers in the cliffs at Flamborough Head; and Mr. Hancock writes (B. of North. & Durh. p. 85):—"This is a resident, and is undoubtedly the true Stock-Dove from which the domestic Pigeon is derived. A few birds breed occasionally in the cliffs at Marsden, and in other localities on the sea-coast, both in Northumberland and Durham, where the cliffs are high. But so like is this species to the common domestic Pigeon, that it is difficult to say positively whether they are escaped birds or are really the wild form. I have, however, in my collection a young individual, that was killed in December 1855, at Newbiggin-by-the-Sea, which is certainly a true wild Rock-Dove. This species is in great abundance, breeding in the cliffs at Gordenstown, near Covesea, in the neighbourhood of Elgin. Here I had a capital opportunity of observing a large colony of these birds, and I shot several specimens. A pair of Peregrines had taken up their abode and reared their young in a hollow in the cliff close to the nesting-places of the Pigeons, and were feeding their nestlings on the tender flesh of their neighbours, preferring it evidently to that of the Herring-Gulls that were likewise breeding in the same locality, and flying about close to them unheeded and unheeding." In Scotland this Pigeon is more numerous than in England, and, Mr. Robert Gray says, is abundant along the whole coast-line of the west of Scotland, on the Outer Hebrides, and in Orkney and Shetland. It is less numerous on the east than on the west coast, but breeds regularly in many suitable localities. In Ireland it is tolerably common on the rocky portions of the coasts, and on the small adjacent islands.

In continental Europe it is very locally distributed; for it is only an inhabitant of the coast where it can find shelter amongst high rocks. In the Færoes it is resident and very numerous, breeding there twice in the season; but in Scandinavia it is only found in one locality, in the Stavanger fjord (59° N. lat.), where it inhabits some small islands. Early in this century it was very numerous there; but at the present time, Mr. Collett informs me, it has become quite scarce, and will soon be extinct. Rennesö is the island where it has always been most numerous, and in 1830 large flocks were to be seen there, whence it straggled to Omö, Klosterö, Mosterö, and the mainland. It is not only destroyed by man on account of the damage it is said to do to the crops, but the Eagle Owl and Goshawk kill great numbers, the latter species especially being a dire enemy to this bird. Nilsson says that Prosten Ekström saw one on the island of Tjörn, in Bohuslän, in a flock of *Columba œnas*; but there appears to be some doubt as to the authenticity of this statement. It does not occur in Finland, North Germany, or Denmark in a wild state; but here and there in North Germany birds which have been domesticated, but had become wild, are to be found; and the same may be said as regards its occurrence in Belgium, Holland, and Northern France, except that the true *Columba livia* is

said to occur on passage in the last-named country. M. Adrien Lacroix says that some few are sedentary in the French Pyrenees; but the larger proportion of those which are found there are birds which pass and repass on their way to and from their northern breeding-stations.

In Portugal, according to Dr. Rey (J. f. O. 1872, p. 153), it breeds abundantly in the numerous cliffs and in the caves and crannies in the mountains on the coasts of the southern provinces, but it is rare near inhabited places, and, he remarks, there are no domestic Pigeons kept in that country. In Southern Spain, Mr. Saunders writes (Ibis, 1871, p. 223), "Abundant on the rocky east coast and in all mountain-ranges, this species swarms to an almost incredible extent in the mountains at the back of the Sierra Nevada. When winding through the dreary ravines between Baza and Lorca, vast flocks kept pouring down to their feeding-grounds from sunrise to about 8 A.M.; and we estimated the number which passed quite near to us as about seven thousand, without noticing more distant bands. Each flock was invariably led by a white or piebald bird." It is common near Gibraltar; and Mr. Savile Reid informs me, "Wild birds come down from the cliffs on the north and east sides of the Rock of Gibraltar to pair with the domesticated ones in the dove-cotes below, especially at the kennels of the Calpé Hunt, where I have seen them. The strangers were rather shy."

According to Von Homeyer it is very abundant on the rocky coasts of the Balearic Isles, but never appears to occur in the interior; and in Italy it is resident and very abundant in the Campagna, along the coast of Tuscany, and in the Apennines. In other parts of the country it is said to be a migrant; but Salvadori does not think that this is the case. In Sicily and Sardinia it is very abundant. Bonaparte described what he supposed to be a distinct form, from Italy, under the name of *Columba turricola*; but, so far as I can ascertain, his bird is a mere variety of the Rock-Dove or of half-wild birds. Baron E. de Selys Longchamps, referring to this supposed species, writes (Ibis, 1870, p. 453):—"Throughout my travels I everywhere collected information respecting the *Columba turricola* of Bonaparte—a species which, according to him, is very common in the old ruined towers of Tuscany, and differs from *Columba livia* in that the rump is not white above, but bluish, as in *Columba œnas*. The naturalists of Turin, Milan, and Florence whom I have consulted, do not recognize it, or regard it as an accidental variety of the half-wild *Columba livia* crossed with tame Pigeons. I examined a specimen in the Museum at Pisa; and Professor Savi is now inclined to the opinion I have just expressed." According to Mr. Wright (Ibis, 1864, p. 137) the Rock-Dove is "sedentary in the rocks and precipices of the southern coast of Malta and Gozo, and on the rocky island of Filfla, where it breeds in considerable numbers. The young birds fly in June, when (the Quail-season being over) the sportsmen amuse themselves by pursuing them in boats. In July their numbers get pretty well thinned; probably a good many then leave us, owing to the difficulty of finding a sufficiency of food. As examples of escaped domestic Pigeons are to be seen breeding in the same localities, crosses doubtless often occur." In Southern Germany the true wild Rock-Dove appears to be rare; but semidomestic birds, or those which have become wild, are found in some localities. I never observed any on the Danube; but Messrs. Elwes and Buckley say (Ibis, 1870, p. 201), "Rock-Pigeons are found all up the Turkish coast of the Black Sea, and probably in other localities. The only specimen we got was shot in the harbour of Sevastopol; and it resembled

*Columba schimperi* more than *Columba livia*, though the rump was of a lighter colour than the rest of the back. There were plenty of them about the rocks on the north side of the harbour, and they appeared quite wild." Von Nordmann remarks that he has not been able to verify its occurrence in the portions of Southern Russia where he collected, and doubts if it is really found there. In Asia Minor and in Greece it is tolerably common, and breeds in the high rocks in many localities. In Greece it is supposed to raise several broods in the season, the first eggs being deposited in April. In the Cyclades it is said to be resident; but in Macedonia it is comparatively rare in winter. In Crete it breeds in large numbers, as also on Naxos. In the Ionian Islands, according to Lord Lilford (Ibis, 1860, p. 236) it is "very common, and resident on the coasts of Albania, Epirus, and Corfu. Near the mouth of the river Kalamo these birds breed on the bare rocks, after the manner of some of the Gulls. On the peninsula of Pagania there is a curious natural pit, some 60 or 70 feet in depth, frequented by this species in great numbers. In this, my servant (who was once lowered into it by a rope for the purpose of forcing out the Doves) had an encounter with a wild cat, which at last retreated into a side gallery and was lost sight of. On throwing stones down this pit, a dozen or two of Doves, Blue Thrushes, Blackbirds, Little Owls, and Nuthatches (*Sitta syriaca*) would often dash out in confusion, with now and then a large Bat, and on one occasion a Peregrine Falcon. There are small colonies of Rock-Doves in many parts of the coast of the island of Corfu, particularly at Paleocastrizza and near Porto Serpente."

Canon Tristram, referring to this bird in Palestine, writes (Ibis, 1868, p. 209):—"*Columba livia* is extremely abundant on the coast and highlands west of the Jordan. My specimens can in no way be distinguished from those from the Orkney Islands. But inland and in the Jordan valley its place is taken by the allied species, *Columba schimperi*, Bp. The myriads of these birds are beyond computation, far exceeding even the clouds of domestic Pigeons. The wadys, with precipitous cliffs of soft limestone, honeycombed in all directions by caves and fissures, are admirably adapted for them. Several of these gorges are named from them 'Wady Hamam,' *i. e.* Ravine of Pigeons. One of the most remarkable is the Wady Hamam opening on the plain of Gennesaret, where are the famed robbers' caves, the scene of our principal bird-nesting exploits, inhabited by thousands of *Columba schimperi*, whose swift flight and roosting-places far in the fissures secure them from the attacks of the many Hawks which share the caverns with them. They likewise swarm in the ravine of the Kelt, in the sides of Mount Quarantania, by Jericho, and, above all, in the cliffs which shut in the Arnon and the Zerka, in Moab, where their abundance is alluded to by the prophet Jeremiah. So secure are their nesting-places, that we never took more than half a dozen sittings of eggs, though we saw hundreds of nesting-holes; but their turns and twistings rendered even the device of a stick and a spoon unavailing."

In North-east Africa this Pigeon is very abundant. Von Heuglin says that it is found throughout Egypt and Nubia, and along the Nile southwards to the rapids of Dar Berber; and, according to Brehm, it inhabits Abyssinia and the southern portion of Arabia Petræa. Dr. Leith Adams remarks (Ibis, 1864, p. 26), "In Egypt it is not easy to define the limits between the wild and domesticated Pigeons, their plumage being so much alike. The denizens of the dove-cotes all preserve the leading characteristics of *Columba livia*. Many-coloured birds are

uncommon. The two black bars on the wings, and single black bar on the tail, with the white on the edges of the outer tail-feathers, were present in all the tame birds I have examined. The permanence of colouring may be owing to the circumstance that no pains whatever are taken to improve the breed. Each town and village has many dove-cotes, which are usually the joint property of several persons; the Pigeons are only kept for their dung, and allowed to shift for themselves. In some districts, as at Sioot, it is marvellous the numbers seen crowding round these mud-built cotes, or feeding in the fields. The most common domestic variety answers to the *Columba schimperi* of Bonaparte; but individuals in all respects agreeing with *Columba livia* and *Columba schimperi* may also be met with among the rocks. No doubt the stragglers from the towns often take to the wild life; indeed, at best they are only half domesticated in the dove-cotes, where I have seldom seen a pied or white Pigeon. The many-coloured varieties are, however, reared in the native houses, and sometimes join flocks of the other; but they rarely interbreed. From these circumstances it would appear that the domestic Pigeon of Egypt has reverted very much towards its original wild state. On one of the walls of the Temple of Medinet Haboo is a sculpture of the time of Rameses III., B.C. 1297, representing that famous monarch as having just assumed the crown of Upper and Lower Egypt. The procession is seen moving on in regal state, and in all the pomp and splendour of the time, whilst a priest is letting off four Carrier Pigeons to announce the glad tidings to every quarter of the globe. This is very interesting, as it shows Pigeons were then used for the purpose of conveying information. According to Horapollo the flesh of Pigeons was greatly esteemed, and there are records of their having been eaten as early as B.C. 3000."

In Algeria this Pigeon appears to be by no means uncommon on the southern slope of the Atlas, where Taczanowski met with it; and Mr. J. H. Gurney, jun., says (Ibis, 1871, p. 295) of it, "Common in the Mzab, and very easy to shoot, and not nearly so difficult to skin as some Pigeons. I almost invariably observed them in pairs on the rocks close to the gardens, but not actually in the palm trees, where all the Doves were. I observed some dark-coloured varieties among these Cliff-Pigeons at Boghari, doubtless caused by domestic ones which had wandered away to breed with them. One specimen was shot which, in the colour of the lower part of the back, approximated to *Columba schimperi*." M. Favier says that it is the most numerous of the Pigeons about Tangier, living in the rocks and even in the ramparts of the town both in a wild and in a domestic state; and it is found on the mainland of Africa down to Senegambia and Sierra Leone. I have examined the type of *Columba gymnocyclus*, Gray, from Senegambia, and I cannot see that it should be separated from *Columba livia*. It is rather dark in colour, about as dark as ordinary examples of so-called *Columba intermedia* from India, has the white patch on the rump very restricted, and there is rather a large bare space round the eye; but otherwise it does not differ from ordinary examples of *Columba livia*. Of islands the Rock-Dove is found on the Azores, Madeira, Canaries, Cape-Verd Islands, and St. Helena. Mr. Godman says (Ibis, 1872, p. 218) it is "very common in the Canaries, Madeira, and the Azores, and is also abundant on the Desertas. It breeds in the cliffs over the sea. In all three groups of islands this species is very variable in colour. The greater part are exceedingly dark all over; some have white above the tail, while others want it; some are like

ordinary Rock-Pigeons. I have also seen a few with white patches on the wings. It is possible these last may be escaped domesticated birds." Vernon Harcourt says that a dark form or variety of the Rock-Dove is found in Madeira. According to Dr. Bolle this Dove inhabits the rocky coasts of the Canaries in great numbers, and he observed it near Orotava, at Palma, on Lobos, and in Lanzarote, even in the interior of the island at several places—for instance, near El Sobaco. Dr. Dohrn, who records it from the Cape-Verd Islands, adds that it appears to be restricted to Santiago; and Mr. Mellis states (Ibis, 1870, p. 102) that it is "abundant on St. Helena, existing both in a wild and a domestic state. In the former, they frequent chiefly a place called the Waterfall, a perpendicular cliff about 300 feet in height, situated inland about two miles and a half from the sea, and take their daily flight to the corn-fields of Longwood or Broadbottom for food."

In Asia the form which has the rump grey and not white appears to predominate; but, as elsewhere, both forms occur, and the bird is subject to considerable variation. Mr. Blanford, referring to the birds found in Persia, says (E. Pers. ii. p. 268), "I am sorry to say I did not note the range of these two races in Persia. Both certainly occur, and, so far as I observed, the common form in the south appeared to be *intermedia* with the ashy rump. Certainly the only specimen preserved belongs to that race; and I know that others were shot. Hume obtained both in Sind. Pigeons are common in the wells and underground water-channels or kánáts, made for irrigation throughout Persia; but at the time of my journey the immense numbers which usually haunt the great Pigeon-towers about Isfahán and other parts had completely disappeared. All had died or been killed during the famine. Indeed I saw comparatively very few Pigeons throughout Central and Northern Persia." I have examined the type of *Columba plumipes*, G. R. Gray, from Dizful, Persia, now in the British Museum; and it appears to me to be a mere variety of *Columba livia*, not differing in any respect from the ordinary form of the Rock-Dove, except that it has the anterior portion of the tarsus sparsely covered with feathers. Mr. Hume says (Stray Feathers, i. p. 218) that he obtained a specimen of our European form of *Columba livia*, shot by Dr. Day in the sandhills of the Roree Division, and was informed that the White-rumped Pigeon was not uncommon there. "Again in the Gaj," he says, "amongst several true *intermedia* I obtained one *livia* and one or two intermediate forms.

"The species that I described with much hesitation as *Columba neglecta* in my 'Ornithology of the Yarkand Expedition,' must now, I am convinced, be identified with *livia*. The wing of this latter species varies, as I find from Scotch specimens, from 8·3 to 9·75; and after comparing European and Indian birds, I entertain no doubt of the identity of the Ladak and Scotch specimens. Cashmere birds, however, which I also class under *livia*, differ slightly: they have somewhat less of pure white on the lower back; and the rest of what is pure white in true *livia* is faintly shaded with very pale grey; in all other respects, size, general hue of plumage, they are identical with the European bird. Of the Sindh birds two are typical *livia*, others resemble the Cashmere birds, and one again seems intermediate between the Cashmere bird and the true *intermedia*, though nearest to the former. Below Duryalo, inside the first range, Dr. May saw large flocks of the White-backed Pigeon similar to the one he shot for me at Roree." Dr. Jerdon writes (B. of Ind. iii. p. 469):—"The Blue Pigeon of India is one of the most common

and abundant birds throughout the country, congregating in large flocks, and breeding wherever they can find suitable spots. They are most partial to large buildings, such as churches, pagodas, mosques, tombs, and the like, frequently entering verandahs of inhabited houses, and building in the cornices. Holes in walls of cities or towns, too, are favourite places; and in some parts of the country they prefer holes in wells, especially, I think, in the west of India, the Deccan, &c. In default of such spots, they will breed in crevices and cavities of rocks, caverns, and sea-side cliffs; and I have often noticed that they are particularly partial to rocky cliffs by waterfalls. The celebrated falls of Gairsoppa are tenanted by thousands of Blue Pigeons, which here associate with the large Alpine Swift. It is more rare in forest countries generally than in the open country. It extends from Ceylon throughout India to the Himalayas, and also to Assam, Sylhet, and Burmah. It is doubtful if it occurs in Afghanistan, or in other parts of Central Asia. These Pigeons are held in favour by most natives, and almost venerated by some; and if they build in the house of a native, he considers it a most fortunate omen. They are, however, very destructive to grain, assembling in large flocks in the cold weather; and in general the natives do not object to their being shot. They are undoubtedly the origin of most of the domestic Pigeons of India." How far south it ranges I cannot say with any degree of certainty. Mr. Holdsworth cites two localities in Ceylon which this Pigeon inhabits—Pigeon Island, near Trincomalie, and Berberyn, not far from Galle; and Layard mentions their having been killed about fifty miles inland from Trincomalie. There is also in the late Lord Tweeddale's collection a specimen from Java which is very dark in colour, and has blotches of blackish slate on the lesser wing-coverts, the rump being greyish white. In the British Museum there is, however, one example from India which agrees closely with this bird; and, judging from Professor Schlegel's description, examples from Japan must somewhat resemble it. In China, according to Père David, both the present species and *Columba rupestris* are found. He says that he found the Rock-Dove in Northern China, and observed large numbers inhabiting caverns at great altitudes in the Tsinling Mountain; and it is said to be common in Japan. In Dauria and Southern Siberia generally *Columba livia* is replaced by what appears to me to be a fairly good species, *Columba rupestris*, Bp., which is certainly the bird referred to by Pallas (Zoogr. Rosso-As. i. p. 560) as variety ♂ of *Columba œnas*, under the name of *Columba rupestris*. This bird may always be recognized by having a broad subterminal white band across the tail, being otherwise coloured as ordinary British examples of *Columba livia*. The bird figured by Henderson and Hume (Lahore to Yark. pl. 31) as *Columba eversmanni*, Bp., appears to me to be fairly distinct. There are two specimens in the late Lord Tweeddale's collection which are distinguishable in having the rump bluish white, the crown and breast richly tinged with vinaceous, and the upper wing-bar very indistinct, being merely a small patch or two small patches of black. In one specimen, which was obtained by Severtzoff, and is labelled by him *Columba brachyura* (*fusca*, Pall.), the back is also tinged with vinaceous.

Essentially a rock-hunting species, the name by which this bird is usually known is a very appropriate one. With us in Great Britain it is almost exclusively found on the rock-bound portions of our coasts, whence they make excursions to the cultivated portions of the country in search of food, often collecting in large flocks in the winter season. It feeds on grain of

various kinds, seeds of many species of wild plants, small shell-snails, &c. &c.; and Dr. Saxby says that during ten months of the year, when corn is not to be procured, it subsists chiefly on the roots of the couch grass, *Triticum repens*, and the seeds of various troublesome weeds, such as *Sinapis arvensis*, *Raphanis raphanistrum*, *Plantago maritima*, and *Capsella bursa-pastoris*; and on account of the amount of these plants it destroys it certainly, to some extent, deserves a good word from the agriculturist, though at the same time I cannot but acknowledge that, where it can get it, it devours large quantities of grain.

In general habits the Rock-Dove very closely resembles our domestic Pigeon, and is, indeed, the stock from which the latter has sprung. Macgillivray gives (Brit. B. i. p. 273) so excellent an account of its habits, that I cannot do better than transcribe his notes, as follows:—

"When searching for food they walk about with great celerity, moving the head backwards and forwards at each step, the tail sloping towards the ground, and the tips of the wings tucked up over it. In windy weather they usually move in a direction more or less opposite to the blast, and keep their body nearer to the ground than when it is calm, the whole flock going together. When startled they rise suddenly, and by striking the ground with their wings produce a crackling noise. When at full speed they fly with great celerity, the air whistling against their pinions. Their flight is very similar to that of the Ringed and Golden Plovers, birds which in form approach very nearly to the Pigeon, as may be seen more especially on comparing their skeletons; and as this affinity has not been observed by any other person, I would direct the attention of ornithologists to it. They usually alight abruptly when the place is open and clear, and, if very hungry, immediately commence their search; although on alighting they frequently stand and look around them for a few moments. On other occasions, however, they fly over the fields in circles, descending gradually. When flying from the rocks to the places where they procure their food, and when returning in the evening, they do not mount high in the air; and when passing over an eminence they fly so low as almost to touch it. When the wind is very high, and their course is against it, they fly in the same manner, taking advantage of the shelter. It used to afford me much pleasure, and probably would be interesting to most people, to observe from one of the wild headlands of Harris the Pigeons flying swiftly and silently towards their homes, along the cliffs, while every now and then a string of Cormorants, Gannets, or Guillemots would come up, and a straggling flock of Gulls pursue their route in a desultory manner.

"The note of the Rock-Dove resembles the syllables *coo-roo-coo* quickly repeated, the last prolonged. It is monogamous, as I apprehend all wild birds, even the gallinaceous, are; and its nuptials are celebrated with much cooing and circumambulation on the part of the male. A love-scene among the rocks is really an interesting sight. Concealed in a crevice or behind a projecting cliff, you see a Pigeon alight beside you, and stand quietly for some time, when the whistling of pinions is heard, and the male bird shoots past like an arrow, and is already beside his mate. Scarcely has he made a rapid survey of the place, when, directing his attention to the only beautiful object which he sees, he approaches her, erecting his head, swelling out his breast by inflating his crop, and spreading his tail, at the same time uttering the well-known *coo-roo-coo*, the soft and somewhat mournful sounds of which echo among the cliffs. The

female, shy and timorous, sits close to the rock, shifting her position a little as the male advances, and sometimes stretching out her neck as if to repel him by blows. The male continues his strutting and cooing, until the female, inadvertently coming upon the edge of the shelf, flies off to the dark recesses of the neighbouring cave, where she has scarcely alighted when her lover is again by her side.

"Matters go on in this manner, and in the meantime a nest is gradually formed, which consists of withered stalks and blades of grass or other plants, not very neatly arranged, but disposed so as to answer the intended purpose. Two beautiful white eggs, of an elliptical form, one an inch and four twelfths in length, one inch and one twelfth in breadth, the other a little shorter, are then deposited; and in due time the young make their appearance. During incubation the male supplies his mate with food, which she picks from his throat as he forces it up from the crop. Even at other times the female often goes up to the male, introduces her bill on one side into his mouth, and obtains a grain of barley or morsel of other food. In about three weeks the young come abroad, and, after being fed and instructed by their parents for some days, are left to shift for themselves.

"The old birds soon repair their nest, and rear another brood. I cannot speak with certainty as to the precise number of broods raised in the course of a season; but I know that there are at least two. The first eggs are laid about the middle of April; and the latest young are seen about the end of September. It appears to me probable, from circumstances which have come under my observation, that the same nest is used for different broods; and it is commonly believed, and not improbable, that these birds pair for life. The young are fed by their parents, who, applying their open mouth to that of the nestling, the mandibles of which enter the pharynx, force up the food from their crop so as to be within reach of the bill of the young, which all the while flaps its wings, and utters a loud cheeping note, indicative of its eagerness to have its wants supplied."

As above stated, the nest of the Rock-Dove is a mere flat collection of dried or even fresh grasses, a few sprigs of heather, or a little seaweed; and the number of eggs is two. These latter are pure white, rather glossy in texture, and in size nearly the same as those of *Columba œnas*. Like all its allies the Rock-Dove drinks often, and when in desert places will fly far to obtain water. Mr. Taylor remarked that those which used to come to the Nile to drink would actually settle and sit on the surface of the water for some time like Sea-Gulls.

The specimens figured are—in the foreground the ordinary white-rumped form, and in the background that with the dark rump.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *a*, ♀. Færoes, May 1862 (*A. Benzon*). *c*, ♂, *d*, ♀. Tagania, Albania, November 1871 (*Hanbury-Barclay*). *e*. Bizerta, Algeria, February 1858 (*P. L. Sclater*). *f*, ♂. Futtegurh, India, October 23rd (*A. Anderson*).

*E Mus. Lord Tweeddale.*

*a, b.* Coorg. *c, d.* Malabar (*Woorst*). *e*, ♂. Umballah, November 1866 (*Beavan*). *f*, ♂. Western India, November 1876. *g*, ♀. Gilgit, July 1876 (*Biddulph*). *h*, ♂. Yassin, September 1876 (*Biddulph*). *h.* Java.

*E Mus. Brit. Reg.*

*a.* W. Africa, type of *C. gymnocyclus*. *b.* Sierra Leone. *c.* Dizful, Persia, type of *C. plumipes*. *d, e.* Nepal (*Hodgson*). *f.* India.

*E Mus. E. Hargitt.*

*a*, ♂, *b, c*, ♀. Orkney (*Dunn*).

*E Mus. Howard Saunders.*

*a*, ♀. Orkneys, January 5th (*Dunn*). *b, c*, ♂. Malaga, April 27th. *d*, ♂. Tangiers.



WOOD PIGEON.
COLUMBA ÆNAS.

# COLUMBA ŒNAS.

(STOCK-DOVE.)

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*Columba œnas sive vinago*, Briss. Orn. i. p. 86 (1760).
?*Columba saxatilis*, Briss. tom. cit. p. 84 (1760).
*Columba œnas*, Linn. Fauna Suec. p. 75 (1761).
*Columba œnas*, Linn. Syst. Nat. i. p. 279 (partim, cum *livia* confusa; 1766).
?*Columba saxatilis*, Gmel. Syst. Nat. i. p. 769 (1788, ex Briss.).
*Columba cavorum*, C. L. Brehm, Vög. Deutschl. p. 492 (1831).
*Columba arborea*, C. L. Brehm, Vogelfang, p. 257 (1855).
*Palumbœna columbella*, Bp. Cat. Parzud. p. 9 (1856).
*Palumbœna œnas* (L.), Gray, Hand-list, ii. p. 233. no. 9241 (1870).

*Colombe*, *colombin*, French; *Pombo trocaz*, Portuguese; *Hamam el Berri*, Moorish; *Hohltaube*, *Holztaube*, German; *de kleine Boschduif*, Dutch; *Lille Skovdue*, *Huldue*, Danish; *Skovdue*, Norwegian; *Skogsdufva*, Swedish; *Sinikyyhka*, Finnish; *Dikey-Golub*, Russian.

*Figuræ notabiles.*

Werner, Atlas, *Pigeons*, pl. 3; Kjærb. Orn. Dan. taf. 28; Fritsch, Vög. Eur. taf. 29. fig. 4; Naumann, Vög. Deutschl. taf. 151; Sundevall, Svensk. Fogl. pl. 31. fig. 3; Gould, B. of Eur. pl. 244; id. B. of G. Brit. iv. pl. 2; Schlegel, Vog. Nederl. pl. 184; Roux, Orn. Prov. pl. 244.

♂ *ad.* capite, collo, dorso, scapularibus et tectricibus alarum superioribus cinereo-cæruleis vix schistaceo tinctis: plumis in colli lateribus et collo postico viridi metallico nitentibus: uropygio et supracaudalibus pallidè cæruleis: remigibus cinereo-nigricantibus, extùs cinereo marginatis, secundariis ad basin pallidè cinereo-cæruleis, secundariis intimis nonnullis et tectricibus majoribus cinereo-nigro notatis: caudâ ad basin cæruleo-cinereâ, versus apicem pallidè cinereâ et plumbeo apicatâ: corpore subtùs cinereo-cæruleo, pectore superiore rufescenti-vinaceo: rostro ad basin rubro, et versus apicem flavido; iride rufâ: pedibus rubris.

♀ mari similis, sed sordidior et vix minor.

*Juv.* sordidior nec collo viridi metallico notato, et secundariis intimis cum tectricibus alarum vix nigro-cinereo notatis.

*Adult Male* (Sheringham, Norfolk, 11th April). Head, neck, back, scapulars, and wing-coverts bluish grey with a dull slaty tinge; feathers on the sides of the neck and hind neck richly glossed with lustrous metallic green; rump and upper tail-coverts light bluish grey; quills blackish grey, externally margined with lighter grey, the secondaries light bluish grey at the base; several of the innermost secondaries and of the wing-coverts above marked with a patch of blackish grey; wing-coverts more blue and lighter than the back; tail at the base bluish grey, then light grey, the terminal portion being dark

lead-grey; underparts bluish grey, except the upper breast, which is vinous red; beak red at the base, becoming yellow towards the tip, the soft portion on the base of the upper mandible greyish; iris red; legs pinkish red. Total length about 13 inches, culmen 0·85, wing 8·45, tail 4·7, tarsus 1·1.

*Adult Female* (Sheringham). Resembles the male, but is less in size, and a trifle duller in general coloration of pulmage. Culmen 0·85 inch, wing 8·2, tail 4·6, tarsus 1·1.

*Young* (Belgium). Duller in colour than the adult; the green on the neck is wanting, and the dark markings on the secondaries and the coverts are scarcely noticeable.

In Great Britain the distribution of this species is very different from that of the Ring-Dove, and far less extensive. Mr. A. G. More writes (Ibis, 1865, p. 140) as follows:—"There is a peculiarity in the distribution of this bird, since it seems to be absent during the breeding-season from several of the south western counties, in which, and even in Dorsetshire, it appears chiefly as a winter visitor. Still there is good authority for its breeding in Gloucester (*Rev. F. J. Scott*), Hereford, Shropshire, and perhaps in North Wales (*Eyton*). The nest has been found both in East and West Yorkshire, but hardly, I believe, beyond the 54th degree of latitude. The bird seems to be most numerous in some of the midland and eastern counties of England, and has not been observed in either Scotland or Ireland. Mr. J. F. Brockholes, who has taken especial pains to identify the species, tells me that the Stock-Dove breeds regularly in Cheshire and South Lancashire, where the nest is placed in fir trees and ivy. The Rev. O. Pickard-Cambridge describes the bird as building in exactly the same kind of locality, among matted ivy, close to the trunks of cedars and fir trees, more often in the holes of old trees where limbs have been broken off." In Norfolk, Mr. Stevenson states (B. of Norf. i. p. 355), "although far less numerous, and more locally distributed than the last species, the Stock-Dove is plentiful enough at certain times of the year and in certain parts of the country, particularly the north-eastern and south-western districts. In the latter (with the exception of about four months, from the middle of September to the middle of January, or even later if the winter be much prolonged) it is found, if not in great abundance when compared with other species, yet in sufficient numbers to be one of the most characteristic birds of that open country. During the latter part of the autumn and beginning of winter, though not perhaps absolutely wanting, yet it only occasionally appears, and then generally flocked in company with Ring-Doves." In the north of England it becomes rarer; but Mr. A. W. Johnson informs me that it has lately been found breeding in Northumberland, the bird having been shot off her eggs. In Scotland it is of rare, almost doubtful occurrence. It is stated to have occurred in Caithness; but Mr. Robert Gray appears to doubt the correctness of this statement, as he only includes it in the article on *C. palumbus*; but he adds that one was shot at Deerness, in Orkney, in October 1861. It has not been recorded from Ireland, nor yet from Greenland, Iceland, or the Færoes; but it is not uncommon in Scandinavia, and Mr. Collett says that it breeds commonly in the south-eastern lowlands, especially in Smaalehnene, on Modum, Romerike, and in Hedemarken, and is in some localities commoner than *C. palumbus*. In the western portions of Norway it is rarer, and only occasionally seen at Stavanger and Bergen. North of the fells its occurrence is uncertain; and Sommerfelt observed a single specimen in October 1861. In Sweden, according to Sundevall,

its northern range coincides as nearly as possible with that of the oak, it being found up to 60–61° N. lat. It breeds at Gefle, and in the southern portion of Dalecarlia and Wermland. Von Wright says that it occurs only in south-western Finland, where, especially near Åbo, it is very common, as well as between that town and Nystad. Near Helsingfors it is seen both in the spring and autumn, and occurs now and then as far up as Kuopio. He shot one at Haminanlaks in November, when it was full winter; but it usually arrives early in the spring, leaving in the autumn. Mr. Sabanäeff informs me that it is occasionally found breeding in the Romanoff, Jaroslaf, and Moscow Governments, and is common in those of Smolensk and Vladimir; and Bogdanoff says that in Kazan it is more numerous than *Columba palumbus*. On the eastern slope of the Ural it was found by Sabanäeff commonly up to 56½° N. lat., but he did not meet with it near Ekaterinburg. It is found in the Baltic provinces and throughout North Germany, where, Borggreve says, it frequents only the non-evergreen woods. Naumann states that it is rare in no part of Germany, and in some districts very common. It is there a migrant, and only during mild winters does an odd straggler remain over the winter. Mr. Benzon informs me that in Denmark it is found during the summer in all almost all the large woods, especially beech- and oak-woods where there are hollow trees, but it is nowhere numerous. Sometimes, however, it is very numerous on passage, especially during the spring migration. Baron von Droste Hülshoff says that it is rare on the island of Borkum, where it occurs on passage. In Holland and Belgium it is rare; and in the latter country, Baron de Selys Longchamps says, it is usually seen on passage early in November and in March, but is sometimes found nesting in the larger woods. Throughout France it is tolerably generally distributed, and breeds in the northern districts, numbers arriving in the southern districts in the autumn, and remaining over the winter. Professor Barboza du Bocage records it as being common in Portugal; but Colonel Irby says (Orn. Str. Gibr. p. 133) that he only once observed it in Spain, near Gibraltar, in the spring. Bailly says that it is less numerous in Savoy than the Ring-Dove, and is most frequently seen singly or in pairs. It is usually seen from the 5th or the 12th October to the 10th November, most frequently during heavy gales from the north. It passes through Italy also in considerable numbers in the autumn, but is less common on the spring migration. It is said to breed, though very rarely, in Lombardy. Mr. C. A. Wright says (Ibis, 1864, p. 137) that it occurs in Malta in the spring and autumn, but does not breed in the island. In Southern Germany it is tolerably common and generally distributed. Dr. Fritsch states (J. f. O. 1871, p. 311) that it is common in Bohemia, in the woods where there are plenty of hollow trees. It does not occur in the vicinity of Prague, and is seldom brought into the market of that town. Mr. Seidensacher observed it during the nesting-season at Sallach; and in the autumn it occurs in Styria in large flocks. It occurs in the countries skirting the Danube, and is numerous in Transylvania during the summer season. Dr. Krüper says that it is found in Greece on passage, but is not very common, and has not been known to breed there. Colonel Drummond-Hay states that numbers winter in Macedonia, but it is only met with singly in Corfu; and Lord Lilford writes (Ibis, 1860, p. 236), "Common about the shores of the Gulf of Arta in March 1857. I have seen single birds at all seasons of the year near Butrinto and Kataito, and once or twice in the island of Corfu." In Southern Russia, Mr. Goebel says, it is very common in the autumn, but rather scarce in the spring, arriving, however, very early from the south; and Professor von

Nordmann says that, without being rare, it is much less numerous than the Ring-Dove where it also, to some extent, remains to breed. It occurs in Asia Minor, near Smyrna; and Canon Tristram shot several in Palestine, in the woods near Jericho. Its occurrence in North-east Africa is somewhat doubtful. A specimen, said to be from Egypt, is in the Berlin Museum; but it was not observed there by Heuglin, Brehm, or Rüppell. It is, however, found in North-western Africa; and is stated by Loche to be common in Algeria, especially in February and October, on passage; and he adds also that it breeds there. Canon Tristram writes (Ibis, 1860, p. 69), "I shot several out of a large flock of this bird in the Dayat of Tihlremet, between El Aghouat and the Mzab country, in the month of November. This was the only occasion on which I met with it in the Sahara; but it is very common in all the wooded districts of the Atlas." Colonel Irby (*l. c.*), referring to its occurrence in Tangier, writes as follows:—"It is neither mentioned by Favier nor Mr. Drake as occurring in Morocco. I found it near the Foudak at the same time and place that the Wood-Pigeons were so abundant. It is sufficiently common to be known to the Moors there by the above-mentioned name, which, by the way, is the same as that used for the next species (*C. livia*). They were in some numbers; and I shot one or two for identification, being further informed by the Moors that they nested in holes of trees. They were evidently breeding at that time; but we failed to discover a nest during the very short period that we remained there. I also noticed the Stock-Dove in April, near Larache."

To the eastward the Stock-Dove is found as far as Persia: Messrs. Dickson and Ross sent specimens from the vicinity of Erzeroum; both De Filippi and Ménétriés obtained it in the Caucasus; and Major St. John shot it on the Persian plateau; but Mr. Blanford did not meet with it. I have examined a specimen in the British Museum from near Erzeroum, and one from Bagdad, which are identical with our European bird. In India it is replaced by an allied species, *Columba eversmanni* (Bp.), of which I have not had an opportunity of examining a specimen, but which differs, Dr. Jerdon writes (B. of India, ii. p. 463), in being "smaller than *Columba œnas*, with a proportionally shorter tail, barely reaching beyond the tips of the wings. It differs, too, from the European bird in the rump being greyish instead of white (?), in the crown being tinged with vinaceous, in the winglet having less black, and in the grey band of the tail, conspicuous in the European bird, being barely discernible in the Indian."

As may be imagined, the Stock-Dove resembles the Ring-Dove in its habits; but there are many differences, easily noticed by a practised eye. In its flight the present species is lighter and more elegant, and when it rises on the wing it does so without the loud flapping sound almost always produced by the Ring-Dove; and in its mode of flight it much more closely resembles the Rock-Dove than that species, being quite as swift if not swifter. Peaceful and quiet in its habits, it is fond of the company of others of its own species; and not only do they collect together in the autumn and winter, but also during the breeding-season, and in suitable localities several pairs may not unfrequently be found nesting in close proximity to each other. In all its movements the Stock-Dove is graceful; and it walks on the ground with ease, progressing by short steps like the tame Pigeon, every now and again nodding its head as it walks. When seated on a bough or branch it sits rather upright; and it usually has some favourite perch, where it will sit early in the day preening its feathers in the morning sun: it most frequently selects some very elevated branch, from which it can have a tolerably clear view of the surrounding country.

Though shy and extremely cautious, it is by no means so shy as the Ring-Dove, and will not forsake its nest when disturbed so soon as that species. It is extremely affectionate when paired; and should one be killed, its mate will search long after it; also, if the female is disturbed when on her nest, the male (who is generally on the watch not far distant) will at once join her on the wing. Its note is a short, somewhat indistinct *coo*, which is not very often uttered; and the love-note which the male utters in the pairing-season differs considerably from that of the Ring-Dove, and bears a closer resemblance to that of the Rock-Dove, but is not so clear. This note is uttered whilst the bird is seated on its favourite perch, or when near the nest; when joined by his mate this cooing note is uttered more rapidly and with greater earnestness, especially before the act of pairing, and, like the tame Pigeon, it bills its mate with evident tenderness and affection. The young birds when in the nest utter a piping note like the young of the tame Pigeon.

Nidification commences with the present species rather early, as old birds will raise as many as three broods in the season, and birds of the preceding year two. It selects the hollow of a tree for the purpose; and hence its German name *Hohltaube* (or *Holedove*); but in some localities it breeds in rabbit-burrows, or, it is also stated, in other convenient holes in the ground. The nest is very simple, being merely a scanty collection of slender twigs or stems of plants, sometimes a few fine roots or a little moss; or occasionally only a few dry leaves are collected together to form a bed for the eggs. Both male and female incubate in turn, and sit very close; and both assist in feeding the young, which remain in the nest for fully three weeks after leaving the egg, when they are able to fly, and are led by their parents into the fields and taught to forage for themselves. When they are able to do this, the old birds commence to make preparations for a second brood. The old nest-hole, when the young leave it, is in such a filthy state that it cannot possibly be used again; and therefore another suitable place has to be selected, which is done without much trouble, as they are not difficult to please as regards a nest-hole. In Norfolk, Mr. Stevenson writes (B. of Norf. i. p. 356), "it occupies the deserted rabbit-burrows upon warrens; it places its eggs about a yard from the entrance, generally upon the bare sand, sometimes using a small quantity of dried roots, &c. barely sufficient to keep the eggs from the ground. Besides such situations, on the heaths it nestles under the thick furze bushes (*Ulex europæa*), which are impervious to rain, in consequence of the sheep and rabbits eating off the young and tender shoots as they grow, always preferring those bushes that have a small opening made by the rabbits near the ground. A few pairs occasionally breed in the holes of decayed trees; this is of rare occurrence in this district." The eggs, two in number, are pure white in colour, usually rather elongated oval in form, measuring about $1\frac{1}{2}$ by $1\frac{2}{40}$ inch in size; and incubation lasts about seventeen or eighteen days.

The Stock-Dove feeds on grain and seeds of various kinds, and when numerous is not unfrequently a great pest to the farmer. Wheat, oats, rye, linseed, and rapeseed, especially the two latter, are eagerly devoured; and it also feeds largely on the seeds of various wild plants. Naumann says that he shot a young bird of the previous year in February, and found in the crop and stomach barley, wheat, oats, wild oats, seeds of *Polygonum convolvulus*, *P. aviculare*, turnip seed, and many grains of the following sorts, viz. *Vicia*, *Lathyrus*, *Orobus*, and *Astragalus*, intermixed with coarse grit and a few small stones. It also feeds on the seeds of conifers, acorns, beech-nuts, and blueberries.

At midday and in the evening the Stock-Dove visits the water with tolerable regularity, and always seeks for running (or at least clear) water, both for drinking and for bathing; for it is very fond of a bath.

It is said sometimes to interbreed with the tame Pigeon, as well as with the Rock-Dove; but from personal observation I have not been able to verify this, and Naumann says that he has not personally known the tame and the wild birds to interbreed.

Writing on the occurrence and habits of the Stock-Dove in Rhenish Prussia, Mr. Sachse says:—"With us this bird is a true forest species; it arrives in mild seasons as early as February, but otherwise in March, and comes in flocks of fifteen to thirty individuals. In the autumn it leaves from the end of October to the middle of November; but not unfrequently flocks remain with us throughout the winter. It frequents old thin oak and beech woods, always selecting localities where there are plenty of hollow trees with dead tops; and as these are getting scarcer here, the Stock-Dove is by degrees becoming rarer. In the winter it feeds on beech-nuts and acorns, and during severe weather it visits the gardens and eats the cabbages. In spring it feeds on seeds and buds of the rape and turnip; and I have found its crop stuffed with these. In the summer it eats winter seed, rape seed, wheat, barley, &c. They pair in March; and the first eggs are laid from early in April to early in May. In 1876 I found two eggs on the 9th of April. They raise two or three broods in the season; and I have found young unfledged birds as late as August."

The specimen figured is the adult male above described, and is in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Sheringham Hall, Cromer, Norfolk, April 11th, 1876 (*H. M. Upcher*). *c*. Kent, May 1875 (*Cooke*). *d*. Albania (*Hanbury Barclay*). *e*, *juv*. Belgium (*Dubois*).

*E. Mus. Brit. Reg.*

*a*. Erzeroum (*Dickson & Ross*). *b*. Bagdad.



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BOLLE'S PIGEON.
COLUMBA BOLLII.

# COLUMBA BOLLII.

(BOLLE'S PIGEON.)

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?*Columba bouvryi*, Bolle, J. für Orn. 1857, p. 329, nec Bp.
*Columba bollii*, Godman, Ibis, 1872, p. 217.

*Figura nulla.*

♂ *ad.* capite, nuchâ et dorso centraliter cærulescenti-schistaceis, colli lateribus et collo postico cum dorso superiore viridescente et purpurascente iridescentibus: colli lateribus ex parte æneo notatis: corpore suprà cum scapularibus et tectricibus alarum saturatè schistaceo-plumbeis: uropygio cærulescenti lavato: remigibus nigricantibus: caudâ nigricante, fasciâ latâ subapicali cærulescenti-plumbeâ transvittatâ: pectore et abdomine superiore rufescenti-vinaceis: gutture, abdomine imo et subcaudalibus schistaceis, illo vix viridescenti nitente: rostro, pedibus et regione oculari corallinis: iride stramineâ: unguibus nigricantibus.

*Adult Male* (Teneriffe). Head, neck, and centre of the back dark dove-blue with a slaty tinge; sides of the neck and hind neck glossed with green, a small portion of the feathers on the sides of the neck tipped with coppery red, fore part of the back extending to the sides of the back richly glossed with reddish purple, the hind crown being also slightly glossed with this colour; upper parts dark plumbeous-slate, bluer on the rump; quills blackish; tail blackish, broadly subterminated with dark dove-blue, and finally tipped with dusky slate; throat down to the breast slaty blue, slightly glossed with green; breast and abdomen deep vinous-, almost coppery red; flanks and lower abdomen with the under tail-coverts deep bluish slate; bill red, darker at the tip; legs coral-red; iris straw-colour; edge round the eye coral-red. Total length about 14·5 inches, culmen 1·0, gape 1·1, wing 8·2, tail 6·2, tarsus 1·2, middle toe with claw 1·5.

*Adult Female* (Orotava). Does not differ from the male, except that it is perhaps a trifle less brightly coloured.

*Young* (Taganana). Is much duller in general tinge of colour than the old bird, and the coppery red on the sides of the neck is merely indicated, the rich green gloss being also nearly absent.

This Pigeon, which had hitherto been considered identical with *Columba laurivora*, has only lately been shown by Mr. Godman to be distinct. This gentleman only met with it in the island of Teneriffe; but it would appear from what Dr. Carl Bolle writes that it may very possibly occur elsewhere in the Canaries. This gentleman writes (*l. c.*) as follows:—"There is no doubt that there is on the island of Gomera a second species of Pigeon which is by no means rare, and inhabits the Monte hueco. I have not seen it myself; but the natives speak positively respecting its occurrence. It is said to be somewhat less than *Columba laurivora*, bluish ash-grey, with a good deal of white on the tail, and is therefore called *Rabiblanco* (white-tail). It is said to inhabit the forests at a greater altitude than the true Trocaz Pigeon, and to keep apart from that bird." Whether the species referred to by Dr. Bolle is the present species or true

*C. laurivora* it is impossible to determine, until such time as examples are procured from Gomera for examination and comparison. At present all the information I can with certainty glean respecting this species is that given by Mr. Godman, who writes (*l. c.*) as follows:—"For some time I was under the impression that this bird was not to be distinguished from the white-tailed one; but on a further examination of the type specimen of *C. laurivora* in the Paris Museum, and on a close comparison of my skins with that in the British Museum, I have no doubt of there being two species of Wood-Pigeon in the Canaries. I procured, in all, nine skins, which include both sexes and young birds. The first I shot in a ravine above Orotava, where I had been told they came to feed in the early morning upon the fruit of the laurel (*Persea indica*). There were three or four more in this flock; but though I watched for them afterwards for two or three days under the same tree, they would not come within shot. I saw this Pigeon also in the laurel-forest of Taraconte, where I spent a couple of days after them without success. I here, however, found three old nests, which the 'Guarda' told me belonged to this Pigeon. They were either in the tree-heath or the laurel trees, about twenty feet from the ground, and built of sticks, much the same as our Wood-Pigeon's. I afterwards found this bird more abundant in the forest of Taganana, at the east end of the island, about 5000 feet above the sea, where I procured the rest of my specimens. It is a very shy bird; and the best way to get them is to hide under the laurel trees where it comes to feed. It is occasionally seen, early in the morning, lower down, upon the patches of corn, but always retires to the dark forest during the middle of the day, at which time they do not fly much, unless disturbed. Those I killed had their crops full of the fruit of the *Persea indica*."

The eggs of this Pigeon are, as yet, unknown, but they will doubtless be found closely to resemble those of our common Wood-Pigeon. I am indebted to Mr. F. DuCane Godman for the only specimen of this Pigeon I possess; but those in his collection, which I have also had on loan, being somewhat better-coloured specimens, I have selected one of these latter to figure and describe, it being the type from which Mr. Godman's description was made.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀. Taganana, Teneriffe, 10th May, 1871 (*F. D. Godman*).

*E Mus. Salvin and Godman.*

*a*, ♂, *b*, *c*, ♀. Taganana, Teneriffe, 13th March, 1871 (*F. D. G.*). *d*, ♀. Taganana, 10th May. *e*, ♀. Orotava, 21st April. *f*, ♂, *g*, ♀. Taganana, 24th May, 1871 (*F. D. G.*).



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CANARIAN PIGEON.
COLUMBA LAURIVORA

# COLUMBA LAURIVORA.

(CANARIAN PIGEON.)

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*Columba laurivora*, Webb & Berthelot, Orn. Can. p. 26 (1841).
*Trocaza laurivora* (Webb & Berth.), Bp. Compt. Rend. Ac. Sc. 1856, p. 837 and p. 948 (1857).

*Figuræ notabiles.*

Webb & Berth. op. cit. pl. 3 (lower figure); Knip, Pig. ii. pl. 43; Bp. Icon. des Pigeons, p. lxix.

*Ad.* capite et collo sordidè plumbeis, pileo et nuchâ viridescenti nitentibus: corpore suprà saturatè schistaceo, alis suprà brunnescentioribus: remigibus saturatè fumoso-brunneis: caudâ ad basin sordidè schistaceo-cinereâ pallidiore quam in *Columbâ bollii*, dimidio apicali pallide cinereo-albâ: gulæ et gutturis plumis ad basin rufescenti-vinaceis viridi apicatis: colli lateribus et collo postico viridescenti- et purpurascenti-iridescentibus: corpore subtùs rufescenti-vinaceo fere æneo: subcaudalibus sordidè schistaceis: rostro, pedibus et regione oculari corallinis: iride stramineâ.

*Adult* (Canaries). Head, neck, and back dull dove-slate, crown and nape glossed with green; sides of the neck glossed with purplish red and green; upper surface of the wings slate, with a brownish tinge; quills dull dark brown; tail dull brownish ashy grey, much paler than in *C. bollii*, on the central portion gradually becoming paler, until the tip is light grey; on the under surface of the tail the terminal portion is whitish; feathers on the throat reddish at the base and tipped with greenish; rest of the underparts coppery red, the under tail-coverts only being dull slaty blue; bill red, darker at the tip; legs coral-red; iris straw-colour. Total length about 14·5 inches, culmen 1·2, wing 8·6, tail 6·2, tarsus 1·5, middle toe with claw 1·82.

But very little is known respecting this Pigeon; and so far as I can ascertain, there seem to be only two examples preserved in public museums, one the type at Paris, and the second in the British Museum. Although at the first glance this species tolerably closely resembles *Columba bollii*, yet a careful comparison at once proves their specific distinctness—the chief points of difference being that the present species has the upper parts paler and browner, the head glossed with green and not with purple; the underparts are redder, and the tail is much paler, has no band on it, but the terminal portion is dull greyish white. Though so rare in collections, it would appear to be tolerably common in the Western Canaries; but having been so constantly confused with *Columba trocaz* and *Columba bollii*, it is impossible to state with any degree of certainty which islands it inhabits; it would, however, appear to be confined to the western group. Whether the Pigeon referred to by Dr. Bolle as being found on the island of Gomera is the present species or *C. bollii* it is difficult to say; but Messrs. Webb and Berthelot refer the Pigeon of that island to the present species, though at the same time they confused all three species under the name of *C. laurivora*; but, as elsewhere stated, they appear to have met with true *C. laurivora* in the Western Canaries.

Like the other two species of Pigeon inhabiting these islands, it is an inhabitant of the true forest, frequenting the wilder and more inaccessible localities, whither it has been driven owing to the persecution it has met with; for when the islands were first discovered it is stated to have been eminently trustful and fearless. Messrs. Webb and Berthelot say that it "is seldom found away from the forest, where its food is to be found; this consists of the berries of the laurel (*Laurus indica*), and occasionally of tender buds of the mocan (*Visnea mocanera*), as we have ascertained by dissecting several specimens. This food, especially the berries of the laurel, impregnates the flesh of these birds with an aromatic perfume, and gives it a slight bitter taste, which is by no means disagreeable; and this Pigeon is justly looked on as one of the daintiest of our birds: nor is this opinion as to its fitness for the table new; for we find the same views expressed in the Middle Ages. In the history of the navigators who left Lisbon in 1341, under the auspices of Alphonse IV. of Portugal, we read that on one of the Canary isles (Gomère) they found in the forests wild Pigeons, which they knocked down with sticks and stones, and ate. 'And these Pigeons,' they say, 'were larger than ours, and tasted as good, if not better, *et in eâdem insulâ lignæ plurimæ et palumbes, quos baculis et lapidibus capiebant et comedebant, invenerunt. Hos dicunt majores nostris et gustui tales aut meliores.*' It is, however, now no longer so easy to procure these Pigeons; for having been persecuted they have become wild, and one can only get at them on the tops of the large trees where they are accustomed to perch. They are easiest killed at their drinking-places; for the forests are too dense to allow one to shoot them flying. We have frequently heard them overhead without being able to distinguish them, owing to the foliage amongst which they were perched."

I have only seen one specimen of this rare Pigeon, that in the British Museum, which is the specimen described above, and figured; but Mr. Godman, who examined the type in the Paris Museum, says that it agrees closely with this bird, both showing the peculiar character in the coloration of the terminal portion of the tail.

It is to be hoped that some collector who may hereafter visit the Canaries will endeavour to obtain more specimens, and to gather further information, beyond what little we at present know, respecting the habits of this rare Pigeon.



MADEIRAN PIGEON.
COLUMBA TROCAZ.

# COLUMBA TROCAZ.

(MADEIRAN PIGEON.)

*Columba trocaz*, Heineken, in Brewst. Journ. 1829, p. 228.
*Columba laurivora*, Webb & Berth. Orn. Can. p. 26 (1841, partim).
*Trocaza bouvryi*, Bp. Compt. Rend. xliii. pp. 837, 948 (1856).
*Trocaza trocaz*, Bp. Consp. Gen. Av. ii. p. 45 (1857, partim).

*Figuræ notabiles.*

Jard. & Selby, Ill. Orn. pl. 98; Webb & Berthelot, Orn. Can. pl. 3 (upper figure); Bp. Icon. des Pig. pl. 70.

♂ *ad.* capite et collo cærulescenti-cinereis vix schistaceo lavatis, plumis in nuchâ et capitis lateribus argenteo apicatis: dorso et tectricibus alarum (majoribus exceptis) saturatè plumbescenti-schistaceis, dorso postico viridi et purpureo nitente: uropygio cærulescenti-plumbeo: remigibus nigricantibus, primariis vix cano marginatis, secundariis intimis schistaceo tinctis, tectricibus primariorum cærulescenti-canis: caudâ plumbescenti-schistaceâ, fasciâ magnâ subapicali cærulescenti-canâ transnotatâ: pectore rufescenti-vinaceo: corpore subtùs imo schistaceo: rostro corallino, ad apicem nigricante: iride stramineâ: pedibus et regione oculari corallinis, unguibus nigricantibus.

♀ *ad.* haud a mare distinguenda.

*Adult Male.* Head and neck slaty dove-blue, feathers on the hind neck and sides of the neck tipped with light silvery or French grey; back and lesser wing-coverts dark plumbeous slate on the fore part of the back and hind neck, glossed with purple and green; rump rather bluer than the rest of the upper parts; quills blackish, some of the primaries with a narrow greyish blue margin, the inner secondaries tinged with slate; primary coverts dove-blue; tail dark plumbeous slate, crossed by a broad subterminal dove-blue band; breast vinous red; rest of the underparts slaty blue; bill and space round the eye coral-red, the former tipped with blackish; iris straw-colour; legs coral-red; claws black. Total length about 16 inches, culmen 1·0, gape 1·2, wing 9·2, tail 7·4, tarsus 1·38, middle toe with claw 2·0.

*Female.* Similar to the male.

The range of this Pigeon is extremely restricted; for, so far as I can ascertain, it has not with certainty been obtained elsewhere than in Madeira, unless, indeed, it may have been confused with *Columba laurivora*, as is far from impossible or even improbable. Dr. Carl Bolle does not, however, appear to have met with the present species, as he remarks (J. f. O. 1857, p. 328) that *Columba laurivora* varies considerably, and that, curiously enough, Vernon Harcourt says even that the Madeiran bird has silver markings on the neck. Messrs. Webb and Berthelot, though they figure the present species as the male of *Columba laurivora*, appear to have met with true *C. laurivora* rather than with the present species; and hence I have deemed it advisable to follow

Mr. Godman in retaining the name given by Heineken for the present or the Madeiran species, and that of *laurivora* for the species inhabiting the other islands, and which has the terminal portion of the tail white. But little appears to be known respecting the present species, chiefly owing to the fact that previous authors have overlooked it and considered it identical with *Columba laurivora*; and I have consequently no data respecting its habits, except the notes published by Mr. Godman, who writes (Ibis, 1872, p. 216) as follows:—"*Columba trocaz* frequents the high laurel forests of Madeira, where it breeds, only coming down occasionally to feed in the cultivated lands. It is very shy, and not easily got at, even by the natives, who are acquainted with its habits. I was out after them for two or three days without getting a shot, though I saw several. The only plan is to go either early in the morning or late at night and sit under the trees (*Oreodaphne fœtens*) which they frequent, and take the chance of their settling above your head without observing you. Even then they are not easily killed, as the foliage is so thick, and the trees so high, as well as being usually placed on such a steep slope on the mountain-side that, when shot, they sometimes fall more than 100 yards below you, smashing themselves to pieces in the fall; hence it is not easy to get good specimens for one's collection. I, however, finally procured eleven fair skins. They feed on the fruit of the bay and till trees, for which they search among the dead leaves upon the ground. The flesh has a strong flavour, in consequence of the aromatic nature of the food." Mr. Godman (*l. c.*) enters fully into the question of the synonymy of the present species and its allies, *Columba laurivora* and *C. bollii*; and it may be well to give a short recapitulation of what he says, the more so as after going carefully into the question I fully agree with the views he adopts. It appears that there can be no doubt that the name of *trocaz* is the correct one for the present species, as Dr. Heineken (*l. c.*) describes it from the island of Madeira. Messrs. Webb and Berthelot, however, confuse the Pigeon of the western group of the Canaries and that of Madeira under the name of *Columba laurivora*, which name was intended to supplant the less classical one of *C. trocaz*. These gentlemen figure, as the male, on the upper part of their plate, *Columba trocaz* of Heineken; and on the lower part of the plate is what they call the female, but which is the Pigeon of the western group; and as the Canaries are the first mentioned of the localities cited by Webb and Berthelot, and this latter bird appears to be the Pigeon met with by them, I quite agree with Mr. Godman that the name *C. laurivora* given by these gentlemen should be retained for it. Respecting the synonymy subsequent to the publication of Webb and Berthelot's work, Mr. Godman writes as follows:—"Bonaparte, in his 'Conspectus Avium,' ii. p. 45, considers that both Heineken's bird and that of Webb and Berthelot belong to one species, which he calls *Trocaza trocaz*, to which the locality 'Ins. Madeira' is assigned, the mention of the Canaries by Webb and Berthelot being overlooked." This view, however, is altered in the 'Comptes Rendus,' xliii. (1856) pp. 837, 948, where Prince Bonaparte justly considers that the birds figured in the plate of the 'Ornithologie Canarienne' belong to two species. He applies the name *Trocaza bouvryi* to the upper figure, retaining that of *laurivora* for the lower. The former name must therefore be placed as a synonym of *C. trocaz*. Both the species are figured in the 'Iconographie des Pigeons,' tt. 69, 70, *C. laurivora* being also figured by Knip, t. 43.

Dr. Bolle, in his first paper (J. f. O. 1855, p. 171), appears to have followed previous authors in confusing the Canarian with the Madeiran bird. He obtained no specimens, though he says

he saw what he calls the smaller bird in Palma. In his second article (J. f. O. 1857 p. 324, *et seq.*) two species are recognized. The first is called *Columba laurivora*; and it would appear that this name is applied to Webb and Berthelot's bird, as now restricted to the so-called female of those authors. The other is called, with doubt, *C. bouvryi*, Bp. But *C. bouvryi*, Bp., is *C. trocaz*, Hein., the Madeiran bird, the occurrence of which in the Canaries there is no evidence to show. This second smaller species referred to by Dr. Bolle, Mr. Godman described as new under the name of *Columba bollii*, as it appears to be fairly distinguishable from, though tolerably closely allied to, *C. laurivora*.

I am indebted to Mr. Godman for two specimens, a pair, of this Pigeon, the male of which I have figured and described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Madeira, June 29th, 1871 (*F. D. Godman*).

*E Mus. Salvin and Godman.*

*a*, ♂, *b*, ♀, *c*, ♀. Madeira, June 29th, 1871. *d*, ♂. Madeira, June 28th, 1871 (*F. D. Godman*).

## Genus TURTUR.

*Columba* apud Brisson, Orn. i. p. 92 (1760).
*Peristera* apud Boie, Isis, 1828, p. 327.
*Turtur*, Selby, Naturalist's Library, v. p. 169 (1835).
*Streptopelia* apud Bonaparte, Consp. Gen. Av. ii. p. 65 (1857).

The Turtle Doves inhabit the Palæarctic, Ethiopian, and Oriental Regions, five species being found in the Western Palæarctic Region.

In habits the Turtle Doves differ but little from the Pigeons. They frequent forests, gardens, and cultivated ground, some of the species being partial to the vicinity of inhabited places. They walk with ease, and fly with great swiftness, threading the tangled forest-glades with ease. They feed entirely on vegetable substances, and feed their young from their own crop like the Pigeons. They are strictly monogamous, and are said to pair for life. Their nest, which is a loose, slight platform of sticks, is placed on a tree or bush; and in it they deposit two elongated oval white eggs.

In the article on the common Turtle Dove I have called it *Turtur vulgaris*, Eyton; but since then I have ascertained that Selby's name, *Turtur communis* (Natural. Libr. v. p. 153, 1835), which has precedence of Eyton's by one year, must stand, and *Turtur vulgaris* will have to sink into a synonym. The generic title *Turtur* is undoubtedly the correct one, as *Peristera* of Boie, given in 1828, was preoccupied by Swainson in 1827 for *Peristera cinerea* (Temm.) and its allies.

*Turtur communis*, the type of the genus, has the bill short, rather slender, compressed, decurved, and sharp-edged, though obtuse at the tip; at the base of the upper mandible are two soft, tumid, bare substances placed over the nostrils; nostrils linear, placed in the lower and fore part of the nasal membrane; wings long, full, rather pointed, the second quill longest, the first being scarcely shorter; tail moderately long, rounded; legs short, rather strong; the tarsus anteriorly scutellate, and posteriorly scurfy; toes moderately long; claws moderately long, arched, acute.

The American Passenger Pigeon (*Ectopistes migratorius*) has been included in the European list on the faith of occurrences stated to have taken place in Great Britain; but it is probable that they were escaped birds, as this Pigeon is not unfrequently kept caged, and examples have been turned out, as stated by Turnbull (B. of East Lothian, p. 41)—who remarks that several were turned out in Berwickshire shortly before a specimen was shot by Lord Haddington at Mellerstain in that county. Under these circumstances, and as this Pigeon is essentially an American species, I have deemed it best to exclude it.



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TURTLE DOVE.
TURTUR VULGARIS.

# TURTUR VULGARIS.

(TURTLE DOVE.)

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*Columba turtur*, Briss. Orn. i. p. 92 (1760).
*Columba turtur lusitanus*, Briss. tom. cit. p. 98 (1760).
*Columba turtur*, Linn. Syst. Nat. i. p. 284 (1766).
*La Tourterelle*, Buff. Hist. Nat. Ois. ii. p. 545, pl. 25 (1771).
*Peristera turtur* (L.), Boie, Isis, 1828, p. 327.
?*Peristera tenera*, C. L. Brehm, Vög. Deutschl. p. 494 (1831).
*Turtur vulgaris*, Eyton, Cat. Brit. Birds, p. 32 (1836).
*Turtur auritus*, G. R. Gray, Gen. of Birds, ii. p. 472 (1844–49, ex Ray).
*Peristera rufidorsalis*, C. L. Brehm, Vogelfang, p. 257 (1855).
*Peristera glauconotus*, C. L. Brehm, op. cit. p. 257 (1855).
*Turtur migratorius*, Selby, fide Bp. Consp. Gen. Av. ii. p. 61 (1857).

*Colombe tourterelle*, French; *Rola*, Portuguese; *Tortola*, Spanish; *Tortora*, Italian; *Gamiem*, Maltese; *Imam*, *Stitsia*, Moorish; *Turteltaube*, German; *Tortelduif*, Dutch; *Turteldue*, Danish; *Turtuldugva*, Færoese; *Turteldue*, Norwegian; *Turturdufva*, Swedish; *Turturi kyyhka*, Finnish; *Krasny golubock*, Russian.

*Figuræ notabiles.*

Kjærb. Orn. Dan. taf. 28; Frisch, Vög. Deutschl. taf. 140; Fritsch, Vög. Eur. taf. 29. fig. 1; Naumann, Vög. Deutschl. taf. 152; Sundevall, Svensk. Fogl. pl. 70. figs. 3, 4; Roux, Orn. Prov. pl. 246; Knip, Pig. i. pl. 42.

♂ *ad.* pileo, nuchâ et collo postico cinereo-cæruleis: dorso fusco-cinereo, rufescente fusco notato: uropygio saturatè cærulescenti-cinereo, centraliter fusco notato: supracaudalibus et rectricibus duabus centralibus brunneis, rectricibus reliquis nigro-fuscis vix schistaceo tinctis, albo terminatis, rectricis extimæ utrinque pogonio externo albo: remigibus saturatè fuscis: tectricibus alarum majoribus et minoribus externis pallidè cinereo-cæruleis, tectricibus reliquis et scapularibus nigro-fuscis conspicuè rufescente marginatis capitis et colli lateribus cæruleo-cinereis, colli laterum parte imâ fasciis quatuor nigris albo marginatis notatâ: gulâ, gutture et pectore rosaceo-vinaceis: abdomine et subcaudalibus albis, hypochondriis cinereo lavatis: rostro brunneo: iride rufescenti-fuscâ, periophthalmis nudis rubris: pedibus rubris.

♀ *ad.* mari similis sed vix minor et sordidior.

*Juv.* suprà brunnescentior, nec capite, dorso et uropygio cæruleo-cinereis sed pallidè fusco-cinereis: colli lateribus haud nigro notatis: remigibus rufescente apicatis: gulâ, gutture et pectore sordidè cervino-cinereis, hôc pallidè fusco-cervino lavato, hypochondriis cæruleo-cinereo lavatis, corpore reliquo subtùs albo.

*Adult Male* (Crimea). Crown, nape, and hind neck bluish ash or dove-blue; back dull brownish ash, marked with dull reddish brown; rump dove-blue, in the central portion slightly marked with warm brown;

upper tail-coverts and the two central rectrices clove-brown, the remaining tail-feathers blackish brown with a blue tinge, broadly tipped with white, the outer feather on each side having the outer web white; quills dark brown; larger wing-coverts and the external smaller coverts pale dove-blue, remaining wing-coverts and scapulars blackish brown very broadly margined with bright rufous; sides of the head and neck ashy blue, becoming rosy vinous on the chin and throat; on the lower part of the side of the neck are four rows of black feathers tipped with white, forming four oblique bars; lower throat and breast rosy vinous, gradually fading into white towards the abdomen and under tail-coverts, which are pure white, flanks slightly washed with ashy blue; beak brown; iris reddish brown; bare skin about the eye red; legs coral-red. Total length about 11·5 inches, culmen 0·8, wing 7·0, tail 4·8, tarsus 0·85.

*Adult Female.* Resembles the male, but is a trifle less in size, and has the colours of the plumage less pure.

*Young* (Surrey, 19th August). Upper parts much browner than in the adult, the prevailing colour being brownish ash, not ashy blue; quills margined and tipped with rufous, and the rufous margins to the coverts and scapulars broader and duller; no dark feathers on the side of the neck; throat and breast dull pale ash, the lower throat washed with buffy brown; flanks bluish grey; rest of the underparts white.

The Turtle Dove inhabits Europe generally, except in the colder portions, where it is only known as a rare straggler; it is a summer visitant throughout the continent, migrating southward into Africa in the autumn. To the eastward it extends into Western Asia, and has been met with in Yarkand; but in Siberia and Eastern Asia it is replaced by an allied species, the Siberian Turtle Dove.

In Great Britain it is tolerably common in the southern counties, but becomes rarer towards the north. Mr. A. G. More (Ibis, 1865, p. 142) defines its breeding-range as follows:—"Breeds in South Devon occasionally, and in Somerset; regularly in Gloucester, and perhaps also in Pembroke; regularly in Herefordshire, Shropshire, and Stafford; in the last two counties it is rare; in Derbyshire occasionally (*Mr. J. J. Briggs*); in Cheshire very rarely (*Mr. J. F. Brockholes*), and in the south of Yorkshire (*Mr. Reid*). To the east and south of this line the Turtle Dove nests in all the midland and southern counties, but is described as rare in Lincolnshire. Dr. Heysham records that a young bird was once taken in Cumberland, where the species is very rarely seen; and the Rev. H. B. Tristram tells me that the nest has once been found as far north as Durham. Yarrell says that the Turtle Dove is found in Lancashire, and is not uncommon in Cornwall; but I have not been able to obtain any evidence of its breeding in either of these counties. It seems also safer to consider the locality of South Wales uncertain for the present."

In Scotland it has been met with in most of the counties, but can only be looked on as a rare straggler; and Mr. Robert Gray writes (B. of W. of Scotl. p. 223) as follows:—"All the specimens that have come under my own observation have been procured in autumn and spring. It has occurred perhaps more numerously in Wigtownshire than elsewhere on the west side; it has likewise been met with in Ayrshire and Dumbartonshire; and, in the Hebrides, specimens have been shot in Islay and Skye." Messrs. Baikie and Heddle record the occurrence of one on Holm, in Orkney, in 1850; and Mr. Saxby says it occurs in spring and autumn almost every year in the gardens of Shetland, especially at Halligarth. In Ireland, Thompson says it is an occasional, almost an annual, visitant to cultivated districts in some parts of the island.

Mr. Müller records but two instances of its occurrence in the Færoes—one in July 1857, and the second on the island of Naalsoe on the 10th October in the same year. It has been met with in most parts of Scandinavia; and Mr. Collett informs me that stragglers occur in almost every portion of Norway, both in the north and in the south; and in the districts bordering the Christiania fiord it is occasionally met with even in flocks; but most of the individuals obtained have been in immature dress. Of late years it has been found tolerably often on the southern and western coasts, even on the coasts of Nordland and Finmark. It is, he says, "highly improbable that the numerous individuals which have occurred during a long succession of years in various parts of the country were all of them stray birds; but, on the other hand, it is hardly possible to name the habitat of a colony whence the individuals in question can have spread."

Sundevall says it is curious that, although only of irregular occurrence in Southern Sweden, it is met with more frequently, and almost regularly, in the north. The instances of its occurrence recorded by him (most of which are cited by Nilsson) are as follows—four in Skåne, one in Vestmanland in November, one at Hudiksvall in August 1840, one at Enontekis in 1837, and two at Quickjock in the autumn of 1841. A small flock is also said to have been seen at Quickjock several years in succession; and one individual was taken in Nerike in September 1857. Several of those obtained were young in their first plumage.

Pastor Sommerfelt says that one was shot on Vatsö some time ago, and that they have since then been observed on Vardö. Besides the occurrence recorded by Professor Sundevall at Enontekis, which place is in Finnish Lapland, it has, Professor Malmgren writes to me, been but once met with in Finland, in Kyrkslätt parish, near Helsingfors, where a single example was shot on the 3rd of October, 1868, and is now in the University collection at Helsingfors. Mr. Sabanäeff informs me that it is common throughout Central Russia, especially in the Tula Government, where it breeds. It occurs in the Moscow and Jaroslaf Governments; it also breeds, nesting in fir trees, but is not common, and probably does not occur higher than in 60° N. lat. In the Keshtemsky and Kaslinsky Ural he found it breeding; but though common on the western slope it was rare on the eastern side of the Ural chain. According to Eversmann it is common in the Perm Government. Throughout North Germany it is generally distributed, and common in summer; and Kjærbölling says that it is rare in Denmark, but breeds near Flensborg, and is said to have nested at Endrupholm. Mr. Beck has shot it at Thye; and Mr. Dahl says that it breeds in Jutland, but does not say where. It arrives late in April or early in May, and leaves in August or September. In Holland, Belgium, and France it is very generally distributed, and common during the summer season; and it is stated by Professor Barboza du Bocage to be common in Portugal. It summers in Spain; and is, Colonel Irby says, extremely abundant in Andalucia, arriving chiefly in the first week in May, and leaving early in October; but he saw a single bird as late as the 31st October at Casa Vieja. Mr. A. von Homeyer observed it in the Balearic isles, and says that it breeds in the wooded hills on the western portion of Majorca, near Arta, the sandy Son Serra and Son Real, but he never met with it on Minorca. He remarks that he never saw any earlier than the 6th of May.

In Switzerland and Savoy, Bailly says, it is not a common bird, and is only met with during about four months and a half of the summer. It nests chiefly on the southern slopes of the hills bordering the plains; and a few pairs are to be met with every year on the bush-covered banks

of the Rhône, in the vicinity of Pont-Beauvoisin, Motte-Servolex, Bourget, Aix-les-Bains, &c. Salvadori states that it abounds in Italy, Sicily, and Sardinia during the seasons of passage, and many remain there to breed. Mr. C. A. Wright says (Ibis, 1864, p. 137) that large flocks visit Malta in May and again in September, but at the latter season they are not so numerous as during the spring migration. Lord Lilford records it as breeding in Corfu and Epirus, arriving in April and leaving late in August; and Dr. Krüper says that it is very common in Greece on passage, but only a few remain to breed. It also arrives there about the middle of April, and returns again in August. It occurs throughout South Germany in summer; and in Styria, as I was informed by the late Mr. E. Seidensacher, it is the commonest of the Pigeons, arriving about the middle of April, remaining to breed, and leaving again late in August or early in September, though stragglers remain as late as October. Dr. A. Fritsch remarks on its abundance in Bohemia; and it is found commonly in the countries bordering the Danube, being numerous round Constantinople in summer. Throughout Southern Russia it is extremely common, and, according to Mr. Goebel, especially so in the Uman district, where, in the autumn, it forms enormous flocks together with the Stock-Dove. In Asia Minor it is common on passage; but it seems that but few remain there during the breeding-season—though in Palestine it is numerous in summer, but never remains during the winter.

Von Heuglin says that it visits North-east Africa regularly in spring and autumn, and he met with it as far south as 10° N. lat. On the islands and in the cliffs in the Dahlak archipelago it was not rare, and he observed it at the Tana lake, in Abyssinia, in the middle of May. Brehm states that it breeds in Egypt; Von Heuglin calls this statement in question, and says that it must be a mistake; but Captain Shelley confirms what Brehm says, and writes (B. of Egypt, p. 214) that it "frequently breeds in the country." It is, however, a summer visitant in North-west Africa, and is stated by Loche to be very abundant in Algeria. Mr. C. F. Tyrwhitt-Drake writes (Ibis, 1869, p. 153) that it is very common on the west coast of Morocco, and on his return to Tangier in May he found it there as a summer visitant; and M. Favier states (*fide* Colonel Irby) that it "is a summer resident near Tangier, vast numbers arriving to cross the Straits in flocks during April and May, returning in September and October, then to retire south for the winter." Vernon Harcourt says that the present species is occasionally found in Madeira; and Dr. Carl Bolle writes (J. f. O. 1857, p. 331) that it is extremely common in Canaria, and tolerably so in Teneriffe, but rarer in Gomera, and found in all the islands; and he adds that he has convinced himself that the species found there is without doubt *Turtur vulgaris*.

To the eastward the present species has been met with as far as Yarkand; but I do not find any record of its occurrence in India, and in Siberia and Eastern Asia it is replaced by the Siberian Turtle Dove, a tolerably closely allied species. Mr. Blanford informs me that it is common throughout Persia. He never saw it in Baluchistan; but he met with it immediately after entering Narmashir, and thence to the north it was found wherever there were trees. It was common in the Elburz Mountains. Dr. Henderson says (Lahore to Yarkand, p. 278) that a single specimen of the European Turtle Dove was obtained at Oi Tográk, in Yarkand, on the 18th August, where it was the only species of Dove observed.

Throughout the whole of Europe the Turtle Dove is a strict migrant; and being a rather tender bird and very susceptible as regards cold, it leaves early in the autumn, and returns rather

late in the spring. It appears to travel by day when migrating, and arrives in the spring singly; but in the autumn it usually travels in small, or occasionally in larger, flocks. It frequents wooded districts, and is found in the woods on the plains as well as in the hills, but does not appear to go up to any great altitude in the mountains, and is found both in non-evergreen woods and in those which are composed solely of conifer trees, but more especially in the latter; for it feeds almost in preference on the seeds of these trees, and when there is an unusually rich crop the Turtle Dove is more numerous than usual in the fir-woods.

It is an exceedingly peaceful, timid bird, living in amity with others of its own species, and is very aptly regarded as an emblem of peace. It frequents the large trees, and is often seen on the larger branches, along which it frequently walks; but when perched quietly at rest it frequently sits on the topmost boughs. On the ground it walks with ease, the body being carried in an almost horizontal position, the neck being rather drawn inwards; but when any thing suddenly attracts its attention it will stretch its neck somewhat and jerk its head whilst peering round in different directions.

It flies with great swiftness and ease, usually direct; but it turns and twists amongst the trees with the greatest ease, and can usually avoid even the swifter birds of prey when amongst the trees in its usual forest-haunts. Though partial to the society of others of its own species, it is less seldom seen in such large flocks as other wild Pigeons; but sometimes it collects in tolerably numerous companies during the autumnal migration. Its note is a soft, somewhat monotonous coo, which is uttered by the male as he is sitting on an elevated perch, usually alone, and with which he calls his mate. When paired they are greatly attached to each other; and should one be destroyed, its mate clearly shows its sorrow by earnestly searching after the lost one; but that, as is often held to be the case, the survivor pines and dies, is scarcely correct, though it appears quite true that it earnestly mourns for its mate. Soon after its arrival it pairs and commences nidification, the place selected being in a wood or grove near clear water, and where the underbrush is somewhat dense. The nest is merely a slight platform of twigs, not so large as a man's hand, placed on the bough of a tree or on a bush, sometimes not many feet above the ground, and at others at a considerable altitude. About the middle of May the eggs, two in number, are deposited. They are pure white in colour, rather glossy in texture, oval in shape, but rather stout, tapering equally towards each end. Both male and female incubate, and take part in the rearing of the young, which remain in the nest until quite able to fly.

The food of the Turtle Dove consists of seeds of various sorts and grain; and it is extremely partial to the seed of conifers. It visits the fields and eats a considerable quantity of grain of almost all sorts, and also feeds on the seeds of many species of weeds and grass. Naumann says that it is partial to the seeds of *Astragalus arenarius*, *Vicia angustifolia*, *Ervum hirsutum*, *E. tetraspermum*, *Polygonum convolvulus*, *P. aviculare*, *P. dumetorum*, and of many sorts of grass, especially of the *Panicum* group. It invariably resorts to fresh, and generally to running water to drink, and always inhabits localities where good fresh water is to be had. It alights at a short distance from the water when going to drink, and then walks to the edge, always selecting a sandy place, and not where the grass extends to the edge of the water.

The specimen figured is an adult male from the Crimea. I have not deemed it necessary to figure the female or immature bird.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Kent. *c*, ♂. Crimea (*Whitely*). *d*. Egypt, April 1871 (*G. E. Shelley*). *e*, *pull.* Belgium (*Dubois*).

*E Mus. Salvin and Godman.*

*a*, *juv.* Surrey, August 19th, 1870 (*F. D. Godman*).

*E Mus. Howard Saunders.*

*a*, *b*, *c*, ♀, *d*, ♂. Valencia, Spain, April. *e*, ♀. Tangier, April (*Olcese*).

*E Mus. C. A. Wright.*

*a*, *b*, ♀. Malta, April 17th, 1869 (*C. A. W.*).



J.G.Keulemans lith.

M.& N. Hanhart imp.

ASIATIC TURTLEDOVE.
TURTUR ORIENTALIS

# TURTUR ORIENTALIS.

(ASIATIC TURTLEDOVE.)

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*La Tourterelle brune de la Chine*, Sonn. Voy. Ind. Orient. ii. p. 177 (1782).
*Columba orientalis*, Lath. Ind. Orn. ii. p. 606 (1790, ex Sonn.).
*Columba rupicola*, Pall. Zoogr. Rosso-As. i. p. 566 (1811).
*Columba pulchrata*, Hodgs. in Gray's Zool. Misc. p. 85 (1831).
*Columba meena*, Sykes, Proc. Zool. Soc. 1832, p. 149.
*Columba agricola*, Tickell, Journ. As. Soc. Beng. ii. p. 581 (1833).
*Columba gelastis*, Temm. Nouv. Rec. Pl. Col. pl. 550 (1838).
*Columba ferrago*, Eversm. Add. ad Zoogr. Rosso-As. iii. p. 17 (1842).
*Turtur meena* (Sykes), Gray, Gen. of B. ii. p. 472 (1844).
*Columba* (*Turtur*) *gelastes*, Temm. & Schl. Fauna Japonica, p. 100, pl. 60 B (1854).
*Turtur rupicola* (Pall.), Bp. Coup d'œil sur l'ordre des Pig. p. 29 (1855).
*Columba vitticollis major*, Temm. fide Bp. Consp. Gen. Av. ii. p. 60 (1857).
*Columba vitticollis minor*, Temm. fide Bp. ut suprà (1857).
*Turtur orientalis* (Lath.), Swinhoe, Ibis, 1860, p. 63.
*Turtur vitticollis* (Temm.), A. O. Hume in Henderson's 'Lahore to Yarkand,' p. 274 (1873).

*Figuræ notabiles.*

Sonnerat, *l. c.*; Temm. Pl. Col. 550; Temm. & Schl. Fauna Japonica, pl. 60 B; Knip, Pig. ii. pl. 27; Sv. Jäg. Nya Tidsk. v. pl. to p. 250.

*Ad. T. vulgari* similis sed major et saturatiùs coloratus: fronte canâ, occipite fusco-plumbeo, gulâ albidâ: corpore suprà saturatè fusco-cinereo: tectricibus alarum et scapularibus rufescenti marginatis: uropygio saturatè schistaceo: rectricibus centralibus brunnescentibus, reliquis apice cano-cinereis, extimâ utrinque pogonio externo etiam albo-cano: jugulo pectoreque fusco-rufescentibus, abdomine centrali rosaceo-vinaceo, subcaudalibus cano-cinereis: collo utrinque plumis nigris, apice lunulis cæsio-cærulescentibus: rostro purpurascente: pedibus rubris: iride rubrâ.

*Adult Male* (Japan). Resembles *Turtur vulgaris*, but is larger and much darker in coloration; the forehead is dark ashy blue; but the rest of the head, sides of the neck, and upper parts are ashy brown, and the margins to the wing-coverts and scapulars are richer and deeper rufous; rump deep slate-blue; tail as in *Turtur vulgaris*, but the white portion is replaced by pale ashy grey; chin yellowish white; rest of the underparts brownish vinous, becoming rosy vinous on the centre of the abdomen; the black feathers on the sides of the neck are tipped with pale ashy blue instead of white; the under tail-coverts are ashy grey; bill purplish; iris red; legs coral-red. Total length about 13 inches, culmen 0·8, gape 0·95, wing 7·5, tail 5·7, tarsus 1·1.

This eastern representative of our common Turtledove inhabits Asia as far east as Japan, and is only known in Europe as an exceedingly rare straggler. According to Professor Rasch two

examples, said to belong to the present species, obtained in East Finmark in 1850, came into Schrader's hands: with this exception, there are only two instances of its having been obtained within the limits of the Western Palæarctic Region; and in both instances the specimens were in immature dress. The first of these birds was found in December 1842, amongst a sledge-load of game from Herjeådale, in Northern Sweden; and the second was caught alive a little to the westward of Piteå in October 1850, and sent to the Museum at Stockholm in August 1851. Here it was kept alive by Mr. Meves, the curator, until 1853, when, having attained its full plumage, it was killed and stuffed, and is now in the Museum.

It has been suggested that the second specimen on record from Sweden must have been one which was brought in some vessel from Japan or China and let loose; but this seems to be improbable. Dr. Sundström, writing to me on the subject, says, "I have used every endeavour to gather information so as to throw light on the occurrence of this bird at Piteå; and Mr. J. P. Pettersson, who is now cashier to the 'Stockholm's Dagblad,' to whom I applied, furnished me with data from which I wrote an article in the 'Svenska Jägarforbundets Nya Tidskrift' in 1869, in which I endeavoured to show as nearly as possible how matters stand with regard to this bird. Mr. Pettersson placed at my disposal a letter from Professor Sundevall, dated 9th September, 1851, and the following statement in writing, viz.:—'In October 1850 the bird in question was caught at a peasant's farm in Svensby, about a mile and a half (Swedish) west of Piteå. I do not recollect the mode of capture; but one day in that month a little girl brought the bird to me at Prins Carl's wharf in Piteå. It was in a cage; and the child told me that her parents had sent her with it, thinking that it must be one of my tame Pigeons, as I kept forty or fifty of these tame Pigeons. As I felt sure that the bird was something rare, I kept it, and wrote to Professor Sundevall about it, promising to send it to the Academy of Sciences the following summer, but was not able to fulfil my promise before the following August. On receipt of it Professor Sundevall wrote to say that it was a Chinese or Japanese bird, &c. &c. It certainly could not have been brought to the latitude of Piteå (65° 19′ 13″ N. lat.) by any vessel from China or Japan, because I am sure that no vessel from the China seas has ever come to any harbour above Stockholm. Besides, when I received the bird it was certainly a wild one, and showed no signs of having been kept in a cage; and it remained very shy during the whole time I had it in my possession. Had the bird been in a cage during so long a journey as from China or Japan, it would probably not have been the only bird of the species on board, and it would also have been more tame, and would have shown signs of captivity; but the whole time I kept it it remained wild, and would not agree with other Pigeons I kept in confinement.' This statement was signed by Mr. Pettersson at Stockholm, under date 15th October, 1869. From this it will be seen that the bird was found far north in our country, and not near any of the harbours where vessels arrive from China or Japan. On the other hand, it was not far north of the locality whence the specimen purchased in the flesh at Stockholm in 1842 came, Jemtland or Herjeådale (the former according to letter, and the latter according to information in print from Professor Sundevall). This second specimen was caught in a wooded locality west of Piteå, where there were no other Pigeons or Doves, either tame or wild; and whilst Mr. Pettersson had it in his possession he could not get it to consort with any other Pigeons, though he tried to get it to do so, hoping that it would pair with one of them."

I myself feel convinced that the bird was not an escaped one from a vessel, for the following reasons, viz.:—So far as I can ascertain, no vessel trading direct from China or Japan has ever discharged at a Swedish port north of Stockholm, or perhaps Gefle; and it is scarcely probable that a young bird, especially after having been long caged (for it must necessarily have been caged when very young), could have flown from either of these ports to Piteå. Besides, a vessel would be several months on the voyage; and the bird must therefore, if it had come that way, have been caged almost as soon as it left the nest. When caught it was in its first autumn's plumage; this, again, is a proof that, had it been brought caged from Eastern Asia, it could not have known what freedom was, and would not have been so wild as it was when in Mr. Pettersson's possession. Professor Sundevall, writing respecting this bird, says (Öfv. K. Vet. Ak. Förh. 1851, p. 183), "It is now over a year old, and has been in moult the entire month (September), and will soon have its full plumage. The specimen from Herjeådale was certainly a bird of the year in its first autumnal moult; and one may with safety suggest that it was hatched nearer than Eastern Asia, perhaps in the very province where it was obtained, or in Lapland; and it is not improbable that a pair had straggled as far west as to Scandinavia, and remained to breed." It must also be recollected that the specimen caught at Piteå was a bird of the year, as remarked by Professor Sundevall, in precisely similar plumage to that from Jemtland; and this fact makes it probable that it could not have straggled from Eastern Asia, but must have been hatched somewhere nearer the place where it was caught.

It is by no means improbable that it has been obtained elsewhere in North-east Europe, and either overlooked or mistaken for the common Turtledove. In Asia it ranges throughout Eastern Siberia, and is found throughout India, and as far south as Malacca. Von Middendorff states that he found it common in South-east Siberia, from the bare summits of the Stanowoi Mountains down to Udskoj-Ostrog. He first observed it on the 22nd May; and at the end of August it was still to be seen on the south side of the sea of Ochotsk. Von Schrenck found it common on the Amoor and the Ussuri, and adds that he was told by the natives that it occurs on Saghalien. The first arrived at the Nikolaieffsk post early in April 1855; and on the 12th September he shot one which was just moulting out of its nestling-plumage. Dr. Radde remarks that it arrives earlier on the Central Amoor than at the mouth of that river, and he observed it as early as the 11th October (O.S.) in the Bureja Mountains. Though it arrives so early, it leaves late; for he observed a few on the 25th September on the islands of the Onon, near the old fortress of Tschindantsk, though the main body leaves the Central Amoor about the 10th September.

In India there are two forms of the present species; but, from the series I have examined, I find the variation between the two so considerable that I cannot treat them as distinct species. One of these forms, the *Turtur rupicola* of many Indian authors, is the dark form with grey under tail-coverts; and the extreme of the other form, which, judging from Sykes's description, is the *Turtur meena* of this author, has the underparts paler than in Japanese and Chinese birds, and the under tail-coverts and terminal portion of the tail nearly pure white. But both the light and dark forms of the present species can at once be distinguished from our Turtledove by having the tips to the black feathers on the sides of the neck greyish blue, and not white. Dr. Jerdon, writing (B. of India, ii. p. 477) about the present species, says that it "is a regular winter visitant, retiring to the hills to breed. It is more rare in the south of India than in Central or

Northern India; and I did not observe it in the forests of Malabar, though observed by Elliot in Dharwar, and by Sykes in the northern part of the Ghats; but I have procured it in bamboo jungles on the Eastern Ghats, in Goomsoor, in Central India, and also in Eastern Bengal, the Khasia hills, and Cachar." According to Blyth in his commentary on Dr. Jerdon's 'Birds of India' (Ibis, 1867, pp. 149, 150), "the Himalayan bird resembles *T. auritus*, except in being much larger; and it is doubtless the *T. auritus* from the Alpine Punjab of Mr. Vigne's list (P. Z. S. 1841, p. 6). The more eastern form (*Columba gelastes*, Temm. Faun. Japon. Aves, tab. lx. B) has the lower tail-coverts greyer. In *T. meena* the latter are dark ash-colour. This last species I obtained in the interior of Martaban, near the Shán frontier. *T. rupicola* must be the species (no. 155) described by Dr. Adams (P. Z. S. 1859, p. 187) as 'common in certain localities on the Cashmere ranges and Ladakh; plentiful likewise to the east towards Simla. Frequents grassy mountain-sides or valleys in the lesser ranges.' It is certainly common near Simla; and it is the *T. orientalis* of Capt. T. Hutton, who states that it is 'a mere summer visitant at Mussoorie, where it arrives early in April, when every wood resounds with its deep-toned cooing. It is not found lower than 6000 feet with us, and departs in October' (J. A. S. B. xvii. pt. 2, p. 13)." But from the above it would seem that the *Turtur meena* alluded to by Blyth is the dark eastern form, and not the bird described by Sykes. Dr. Leith Adams states that it occurs in cultivated districts in Cashmere and Ladak; and Dr. Henderson (*l. c.*) met with it in considerable numbers in the Sind valley, Kashmir. Mr. A. O. Hume (*l. c.*) enters very fully into the question of the differences between the two forms of the present species; and I may refer to his article on the subject. To the southward the present species has been found as far as Ceylon, where, Mr. Layard states, he obtained one in immature dress. Mr. Blyth records it from Arrakan and Tenasserim, in Burmah, and Mr. Wardlaw-Ramsay from Tonghoo, Karen-nee at 4000 feet; and, according to Mr. Blyth, it is found down to Malacca. In China, Mr. Swinhoe states, it is found in South China, Formosa, and Hainan in winter. In Japan the present species appears to be tolerably common. Commodore Perry obtained several at Hakodadi, where Mr. Whitely also met with it; Captain Blakiston speaks of it as being common enough in the summer and autumn; and I have received it from Yokohama.

In habits the present species is said not to differ from the common Turtledove; and its nest and eggs closely resemble those of that species. I am indebted to Mr. W. E. Brooks, C.E., for an egg of this bird, which resembles eggs of the European Turtledove, but is slightly larger.

The specimen figured is an adult male from Japan, in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

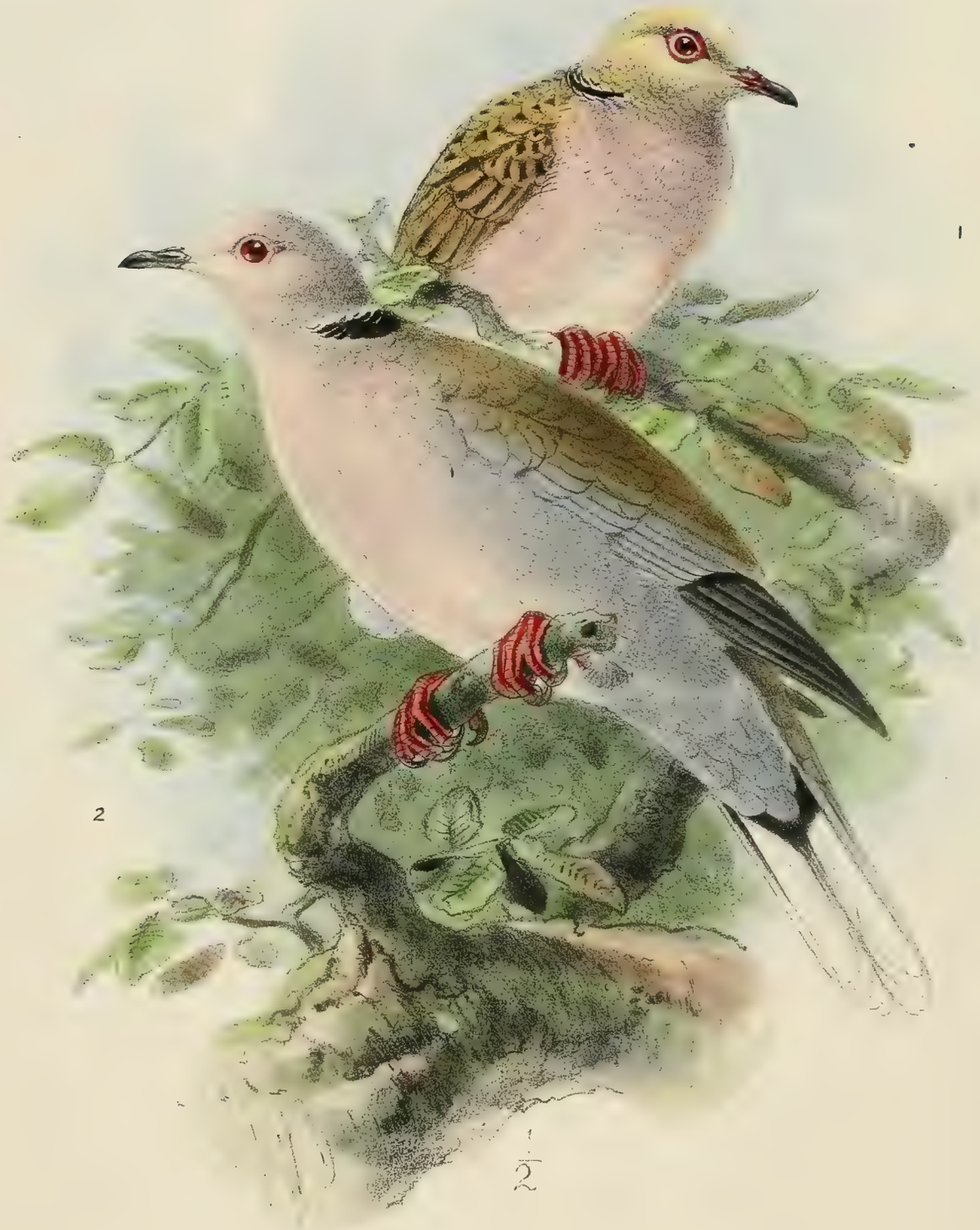
*a*, ♂ *ad.* Yokohama, Japan. *b*, ♂. Yokohama, February 14th, 1870 (*Captain Conrad*). *c*. India (*Burton*).

*E Mus. Brit. Reg.*

*a*, *b*, *c*, *ad.*, *d*, *juv.* Nepal (*Hodgson*). *e*, ♂. China (*Gould*).

*E Mus. H. B. Tristram.*

*a*. N.W. Himalayas. *b*. India. *c*. Maunbhoom, India (*Beavan*).




J.G.Keulemans lith.

Hanhart imp

1. ISABELLINE TURTLE-DOVE.
TURTUR ISABELLINUS.
2. COLLARED TURTLE-DOVE.
TURTUR RISORIUS.

# TURTUR ISABELLINUS.

(ISABELLINE TURTLE DOVE.)

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*Turtur isabellinus*, Bp. Compt. Rend. xliii. p. 942 (1856).
*Turtur sharpii*, Shelley, Ibis, 1870, p. 447.
*Turtur turturoides*, Pr. Württ. Icon. ined. t. 67, fide Heugl. Orn. N.O.-Afr. Add. p. clxx (1871).

*Figuræ notabiles.*

Bp. Icon. Pig. pl. 102; Shelley, B. of Egypt, pl. x. fig. 2.

*Ad. Turturi vulgari* similis, sed minor: pileo, capitis lateribus et corpore suprà rufescenti-fulvidis, pileo et nuchâ pallidioribus et ochraceo tinctis: tectricibus alarum conspicuè ferrugineo-fulvido marginatis: urópygio et supracaudalibus fuscis, fulvido marginatis: caudâ sicut in *Turture vulgari* picturatâ, sed suprà saturatè fuscâ nec schistaceo tinctâ: mento et gulâ fusco-ochraceis, gutture et pectore saturatè æneo-rosaceis, abdomine imo et subcaudalibus albis: rostro, iride et pedibus sicut in *T. vulgari* coloratis.

*Adult Male* (Egypt, April). Differs from *Turtur vulgaris* in being smaller, in having the crown, sides of the head, hind neck, and upper parts generally tawny reddish brown, on the head paler and ochreous in in tinge; wing-coverts broadly margined with warm rufescent ochreous brown; rump and upper tail-coverts dark brown, broadly margined with tawny brown; tail as in *Turtur vulgaris*, but the upper surface is dark brown, without any tinge of slate; chin and upper throat pale brownish ochreous, gradually fading into deep coppery pink, which again fades into white on the lower abdomen and under tail-coverts; soft parts as in *Turtur vulgaris*. Total length about 11 inches, culmen 0·7, wing 6·0, tail 4·3, tarsus 0·8.

This, a desert form of the common Turtle Dove (from which, however, it is clearly specifically distinct), is only, so far as is yet known, found in North-east Africa, where it is found from near Cairo southward throughout Egypt and Nubia.

Not only earlier explorers in North-east Africa, but many of those who have recently worked at the ornithology of that portion of the globe have confused the present species with *Turtur vulgaris*; and there is consequently but little reliable information on record respecting it. Bonaparte, who first recognized its distinctness from *Turtur vulgaris*, named it (*l. c.*) from a specimen in the Berlin Museum received from Egypt, and gives its habitat as "ex insulis Ægypti superioris," without any further details. Captain Shelley, who obtained it in Egypt on his journey there for collecting, failed to identify it with Bonaparte's *Turtur isabellinus*, and renamed it (*l. c.*) *Turtur sharpii*; but he has since convinced himself that his name will not stand. He says (B. of Egypt, p. 215):—"It arrives in the beginning of February, and by the end of the month becomes plentiful throughout Egypt and Nubia, and may be found breeding in great numbers towards the latter end of March, some three weeks before *Turtur auritus* arrives in the country. . . . . This Dove I regard as a desert form of *Turtur auritus*, and in some respects as intermediate between that bird and *Turtur senegalensis*. It appears never to breed

on the ground as the latter bird often does, but resembles it in the habit of frequenting burial-grounds and sandy districts, frequently at some distance from trees, which is seldom the case with *Turtur auritus*. Its egg is intermediate in size, and, from the one specimen I brought home, appears to be of a less pure white than those of the other two species. In the beginning of April it so far surpassed in numbers its congener, *Turtur senegalensis*, that sixty out of sixty-two specimens which I killed on an island of the First Cataract were of this species."

Von Heuglin, who only recognizes it as a species in the addenda and corrigenda of his work, gives no details respecting its range and habits beyond what he takes from Captain Shelley's work; but Mr. J. H. Gurney, jun., in his notes on the ornithology of Egypt (Ramb. Nat. p. 179), has:—"Captain Shelley says that this bird arrives in the beginning of February; but though a sharp look-out was kept by us, we did not get any before the 26th of March, when five were shot on Elephantine Island. For the next ten days it was very common, and I saw some large flocks evidently migrating. Then it grew scarcer, and I began to think that we had reached its northern limits; but I found it again at the Fayoom. Here it probably breeds among the tamarisk-bushes, though I often saw it out on the lake. The specimens we shot at the Fayoom were not so sandy-coloured, nor nearly so bright as those we killed before. One shot on the 27th of March contained a perfect egg ready for exclusion."

It seems that the present species penetrates tolerably far south in the winter season; but I am unable to find how far into the interior of Africa its range extends. It is not included by Messrs. Finsch and Hartlaub in their work on the ornithology of East Africa, and does not appear, therefore, to have been met with within their limits. Beyond what information is given above I find nothing on record respecting the habits of this little-known species.

The specimen figured is an adult bird obtained by Captain Shelley in Egypt.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Egypt, April 1871 (*G. E. Shelley*).

*E Mus. G. E. Shelley.*

*a*, ♂ *ad.* Egypt, April 1871, type of *T. sharpii* (*G. E. S.*).

# TURTUR RISORIUS.

(COLLARED TURTLE DOVE.)

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*Columba turtur torquatus*, Briss. Orn. i. p. 95 (1760).
*Columba risoria*, Linn. Syst. Nat. i. p. 285 (1766).
*La Tourterelle à collier*, Buff. Hist. Nat. Ois. ii. p. 550, pl. xxvi. (1771).
*Turtur douraca*, Hodgs. in Gray's Zool. Misc. p. 85 (1844).
*Turtur risorius* (L.), Layard, Ann. Nat. Hist. xiv. p. 59 (1854).
*Peristera risoria* (L.), C. L. Brehm, Vogelfang, p. 257 (1855, partim).
*Streptopelia risoria* (L.), Bp. Consp. Gen. Av. ii. p. 65 (1857).
*Turtur intercedens*, Finsch & Hartl. Vög. Ost-Afr. p. 545 (1870, nec Brehm).
*Turtur stoliczkæ*, Hume, Stray Feathers, ii. p. 519 (1874).

*Ad.* capite et collo canescenti-vinaceis, pileo magis cano lavato, fronte albicante: fasciâ colli postici nigrâ albo marginatâ: corpore et alis suprà pallidè et obsoletè fuscis, uropygii lateribus schistaceo-canis: remigibus primariis nigro-fuscis, secundariis schistaceo-canis, versus apicem fusco lavatis: marginibus alarum cæruleo-canis: rectricibus centralibus dorso concoloribus, reliquis ad basin cæruleo-canis, versus apicem pallidè canis et albo terminatis: pectore vinaceo, abdomine imo et subcaudalibus schistaceo-canis, hypochondriis cinereo-cæruleo lavatis: subalaribus albis: caudâ subtùs ad basin nigrâ et in parte apicali albâ: rostro nigricante: pedibus saturatè rosaceo-rubris: iride coccineâ.

*Juv.* ubique sordidior, minus vinaceo et magis cinereo-fusco coloratus, fasciâ collari nullâ.

*Adult Male* (Palestine). Head, neck, and breast light greyish vinous, the crown more tinged with blue-grey; back, scapulars, inner wing-coverts, inner secondaries, and rump dusty brown, becoming rich dove-blue on the sides of the rump; primaries blackish brown, becoming ashy blue at the base; secondaries dark dove-blue, washed with brown at the tip; edge of the wing, including the outer wing-coverts, dove-blue; central tail-feathers coloured like the back, the rest dark ashy blue at the base, then light blue-grey, fading to white towards the tip; a tolerably broad black collar margined with white passes from the hind neck half round; underparts pale vinous, becoming deep dove-blue on the lower abdomen and under tail-coverts, these last being uniform in colour; flanks washed with blue-grey; under wing-coverts white, tinged with dove-blue towards the edge of the wing; under surface of the tail blackish on the basal and white on the terminal portion; bill black; feet dark pinkish red; orbital skin whitish; iris crimson. Total length about 12·5 inches, culmen 0·8, wing 7·15, tail 5·7, tarsus 0·95.

*Adult Female* (Palestine). Undistinguishable from the male.

*Young Male* (Haskeuy, Turkey). Differs from the adult in being much duller in colour, the vinous coloration being more ashy brown in tinge; the light ending to the tail is smaller; and there is only an indication of the collar on the hind neck.

This species, which probably is the parent stock of the domestic Turtle Dove, inhabits Southern Asia, Japan, China, India, &c., ranging westward into Palestine, Asia Minor, and Turkey in

Europe, being replaced in North Africa by a nearly allied though fairly separable form, the *Turtur decipiens*, Finsch & Hartl.

In Turkey, the only portion of Europe proper where it is found, it is very common in some parts. Dr. Finsch met with it in the villages in Bulgaria; and in Constantinople it is found not uncommonly. Mr. E. Cavendish Taylor states (Ibis, 1864, p. 410) that he met with a few pairs among the cypress trees in the seraglio-gardens in Stamboul; and Messrs. Elwes and Buckley say (Ibis, 1870, p. 201) that it "inhabits most of the towns and villages in the south of Turkey, and remains all the winter. In Constantinople it is especially numerous, and also in some of the Macedonian villages which are interspersed with trees and gardens. It appears to love the neighbourhood of dwellings, and may be seen sitting, like a Sparrow, on the roofs of the houses, where it is never molested by the Turks. It breeds in the cypresses, which almost universally adorn a Turkish graveyard, and in the immense old plane trees in the bazaars." It is said to be common throughout Asia Minor, there, as in Turkey, frequenting inhabited places; and Mr. E. C. Taylor remarks (*l. c.*) that he met with it in considerable numbers in the Turkish graveyards near Smyrna. In Palestine, Canon Tristram writes (1868, p. 211), it is "a permanent resident round the Dead Sea, but only in small numbers in winter, when it is shy and wary. In spring its numbers are largely increased, and it spreads itself through the greater part of the country, up to Mount Tabor, and breeds everywhere in trees and bushes, generally living in small flocks of eight or twelve together.

It appears to be of but rare occurrence in Persia, where, Mr. Blanford states, he never observed it; but Major St. John saw a pair in captivity at Isfahan, which, he was told, had been taken from a nest in a garden near there. In Baluchistan, however, Mr. Blanford found it not rare; and Mr. A. O. Hume says that it is very common throughout Sindh. According to Dr. Jerdon (B. of Ind. ii. p. 482) the present species is "generally diffused throughout India, frequenting hedges and trees in the neighbourhood of cultivation, and also low bush or reed-jungle. It is found in Ceylon, but is rare in Malabar, and generally in forest-country; and it appears not to occur in Arrakan, nor in the countries to the east of the Bay of Bengal. Layard notices its partiality for *Euphorbia* bushes, in which, he says, it generally builds its nest. Blyth states that it inclines to be more gregarious than our other Doves, but less so than *Turtur meena*. Like the other Doves, it breeds in the plains at all seasons, but also, it appears, ascends the hills near Mussooree to breed." To this I may add that Captain Feilden has obtained it in Upper Pegu, and it occurs as far east as Japan. It was also obtained on the Kashgar expedition; and the birds brought from there seem to be, as a rule, rather larger than those in the plains of India. Mr. A. O. Hume wishes to make a distinct species of the Kashgar bird, and calls it (*l. c.*) *Turtur stoliczkæ*. I have not had an opportunity of examining a specimen from there; but, judging from the series of specimens of *Turtur risorius* I have examined, and from Mr. Hume's description, I cannot believe that he is justified in making a new species. The characters on which he bases his species are larger size, a broader nuchal collar more broadly margined with white, and a larger amount of white on the lateral tail-feathers—all of which I find very variable in the specimens I have examined; for they all differ, more or less, in size, in the breadth of the nuchal collar, and in the amount of white on the tail. The size he gives of his specimen of *T. stoliczkæ* is—wing 7·35, tail 6·2, against Dr. Jerdon's measurements of the Indian bird, of

wing 6·5, tail 5·5; and I find that specimens from India, Turkey, Palestine, and Japan vary in size as follows—wing 6·4 to 7·2, tail 5·0 to 5·7, which shows how little the difference in size can be taken into consideration in making a new species.

I may here mention that Dr. Severtzoff includes it in his list of the birds of Turkestan with a query, and he was unable to give me any definite information respecting it. It occurs, however, certainly in Japan and China, and also straggles to South-east Siberia; for Dr. von Schrenck mentions that Mr. Maximowicz obtained one on the 5th November, near the Mariinskischen Post, close to 52° N. lat.

It is not included by Temminck and Schlegel in the 'Fauna Japonica;' but it cannot be rare in Japan, as there were several specimens in a collection I lately received from Yedo; and in China, Mr. Swinhoe writes (P. Z. S. 1871, p. 397), it is found frequenting the trees of villages near the Great Wall, but not at Pekin itself.

In habits this Dove is said to resemble the Egyptian Turtle Dove, as also in its mode of nidification. It makes a slight platform of sticks on a tree or bush, in Turkey selecting the cypresses, and in Ceylon showing a partiality for the *Euphorbia*-bushes, and deposits two eggs, pure white in colour, and rather elongated-oval in shape. I am indebted to Mr. Rhodes W. Morgan for several eggs of this Dove, taken by him at Kurnoul, in Southern India, which average in size about $1\cdot\frac{7}{40}$ by $\frac{35}{40}$ inch.

This Dove is by no means particular as to the selection of any particular season of the year for nidification; and Mr. A. O. Hume says that he has taken eggs in every month from December to August, and has no doubt that others have found them in the remaining quarter. The nest, he writes (Nests and Eggs of Ind. B. p. 507), "is placed on any bush or tree—prickly and thorny sites, such as are afforded by the *Zizyphus*, the wild date, babool, *Euphorbia*, &c., being often, but by no means universally, selected. Generally the nest is within fifteen, not very rarely within five feet of the ground; but, again, I have found it thirty or forty feet up a large tree. The nest is placed indifferently in a fork, in amongst numerous prongs, on a broad horizontal bough—anywhere, in fact, where a secure and sufficiently wide basis can be found, and is usually a mere platform, some six inches in diameter, composed of thin twigs and lined with grass-stems, with a slight depression in the centre. Occasionally the nest is rather more saucer-like; a few roots or grass-stems are not unfrequently intermingled; and I have seen nests composed wholly of grass." According to Mr. A. Andersson it sometimes breeds on the ground; and he found, on the 20th November, a nest, consisting of a few dry twigs and grass-stalks, placed on the bare sand, and containing two eggs.

The note of this Dove is said to differ from that of the common caged Turtle Dove, and is by Blyth stated to resemble the syllables *kookoo-koo*, *kookoo-koo*. Dr. Jerdon says that in confinement the two birds interbreed readily, and produce fertile offspring, which is intermediate in size and coloration as well as in note.

The present species has by some authors been considered to be the bird referred to by Brehm (Vogelfang, p. 258) as *Peristera intercedens*; but this view I cannot for a moment indorse. Brehm, as usual, gives no proper description of his bird; and as he says that it inhabits East Africa, where the present species is not found, he cannot refer to it.

I purposed giving to my readers a short review of the different African Turtle Doves allied

to the present species; but my friend and former colleague, Mr. R. B. Sharpe, informs me that he is now engaged in working out this group; so I have left the matter in his hands and handed over to him the specimens I had collected together for this purpose. I will merely say that the African species *Turtur decipiens*, Hartl. & Finsch (Vög. Ost-Afr. p. 544), of which I have examined the type, differs from the present species in having the under tail-coverts conspicuously margined with white.

The specimen figured, on the same Plate with *Turtur isabellinus*, is an adult male from Palestine in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Jericho, January 1864 (*H. B. Tristram*). *b, ad., c, jun.* Yedo, Japan (*C. M'Vean*).

*E Mus. C. G. Danford.*

*a*, ♂ *ad.*, *b*, ♂ *jun.* Haskeuy, Turkey, April 9th, 1875 (*C. G. D.*).

*E Mus. Brit. Reg.*

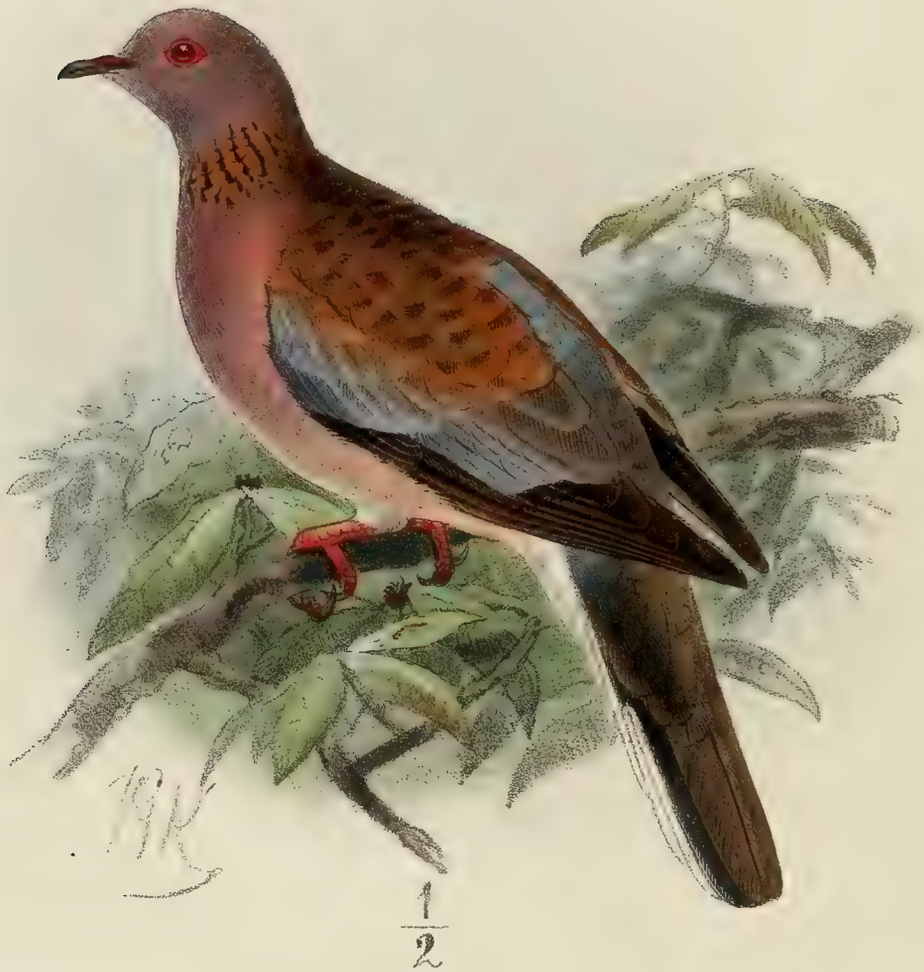
*a*, ♂. Baluchistan, March 29th, 1872 (*W. T. Blanford*). *b.* India (*Hodgson*). *c, d.* Nepal (*Hodgson*). *e, f, g.* Kamptee (*Hinde*). *h.* Punjâb (*Kearsey*). *i*, ♂, *k*, ♀. Ghor el Safieh, Palestine (*H. B. Tristram*).

*E Mus. H. B. Tristram.*

*a*, ♂. Jericho, January 11th, 1864 (*H. B. T.*). *b*, ♀. Jericho, April 15th, 1864, shot off nest containing eggs (*H. B. T.*).

*E Mus. G. E. Shelley.*

*a*, ♀. Jericho, January 13th, 1864 (*H. B. Tristram*).



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EGYPTIAN TURTLE DOVE.
TURTUR SENEGALENSIS.

# TURTUR SENEGALENSIS.

(EGYPTIAN TURTLE DOVE.)

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*Columba turtur gutture maculato senegalensis*, Briss. Orn. i. p. 125, pl. viii. fig. 3 (1760).
*Columba senegalensis*, Linn. Syst. Nat. i. p. 283 (1766, ex Briss.).
*Tourterelle à gorge tachetée du Sénégal*, Buff. Hist. Nat. Ois. ii. p. 553 (1771).
*Tourterelle grise de Surate*, Sonn. Voy. Ind. ii. p. 180 (1782).
*Cambayan Turtle*, Lath. Syn. ii. pt. 2, p. 652 (1783).
*Senegal Turtle*, Lath. tom. cit. p. 655 (1783).
*Columba cambayensis*, Gm. Syst. Nat. i. p. 779 (1788).
*Columba ægyptiaca*, Lath. Ind. Orn. ii. p. 607 (1790).
*Columba suratensis*, Vieill. Tabl. Encycl. i. p. 236 (1823).
*Columba maculicollis*, Wagl. Syst. Av. *Columba*, no. 97 (1827).
*Turtur senegalensis* (L.), Bp. Ucc. Eur. p. 52 (1842).
*Peristera senegalensis* (L.), C. L. Brehm, Vogelfang, p. 257 (1855).
*Peristera rufescens*, C. L. Brehm, ut suprà (1855).
*Peristera ægyptiaca* (Lath.), C. L. Brehm, ut suprà (1855).
*Turtur cambayensis* (Gm.), Reichenb. Naturg. Columb. p. 72 (1856?).
*Peristera rufescens*, L. Brehm, Nat. u. Zucht der Taub. p. 54 (1857).
*Peristera pygmæa*, L. Brehm, Nat. u. Zucht der Taub. p. 56 (1857).
*Turtur rufescens* (Br.), Reichenb. Naturg. Columb. ii. p. 173 (1862).
*Turtur pygmæus* (Br.), Reichenb. ut suprà (1862).
*Turtur savignyi*, Reichenb. fide Finsch & Hartl. Vög. Ost-Afr. p. 551 (1870).

*Figuræ notabiles.*

Temm. & Knip, Pig. pl. 45; Savigny, Desc. de l'Egypte, pl. 5. fig. 9; Bree, B. of Eur. iii. pl. to p. 195.

♂ *ad.* capite et collo purpureo-vinaceis: dorso et scapularibus cinnamomeo-fuscis: tectricibus alarum intimis rufescenti-cinnamomeis: uropygio centraliter et supracaudalibus sordidè fuscis, uropygio lateraliter cærulescenti-cinereo: remigibus nigro-fuscis, extùs vix albido marginatis: rectricibus centralibus fuscis, reliquis ad basin schistaceis fasciâ medianâ nigricante instructis, externis in parte apicali albis, reliquis pallidè schistaceo-cinereis: plumis colli lateralibus et frontalibus nigris valdè cinnamomeo apicatis: pectore rufescenti-vinaceo, abdomine albido, subcaudalibus niveis: hypochondriis cærulescenti-cinereis: rostro nigricante, versus basin rufescente tincto: iride rufâ: pedibus rosaceis.

*Jun.* (*fide* Von Heugl. Orn. N.O.-Afr. i. p. 843) capite, collo et pectore sordidè cinnamomeo-fulvis colore vinaceo intermixto: torque jugulari nigro nullo: alæ tectricibus, supracaudalibus et tertiariis (his partim) latè nec abruptè fulvo limbatis: abdominis plumis pallidè et sordidè colore rufo-fulvescente umbratis.

*Adult Male* (Egypt, 31st March). Head and upper part of the neck and hind neck purplish pink; back and scapulars warm brown, becoming clear warm clay-rufous on the inner wing-coverts; sides of the rump blue, the centre and the upper tail-coverts dull brown; quills blackish brown, externally narrowly margined with dull white; wing-coverts (except as above stated) dove-blue; central rectrices brown, the remaining tail-feathers slate-blue at the base, then black, the terminal half being white in the outer feathers, and dull slaty grey on the inner ones; feathers on the sides and front of the neck black, with broad yellowish coppery tips to the feathers forming a collar; chest pinky vinous, gradually fading into white towards the vent; eyelids lilac-red; bill dusky, with a reddish shade towards the base; feet red; iris orange-red. Total length about 11·5 inches, culmen 0·75, wing 5·8, tail 4·7, tarsus 0·85.

*Adult Female.* Resembles the male, but is somewhat paler in general tinge of colour.

*Young* (*fide* Von Heuglin). Head, neck, and breast dull cinnamon-brown, intermixed with vinous, the collar wanting; wing and upper tail-coverts and some of the inner secondaries washed with brown; abdomen pale and dull in colour, and clouded with reddish brown.

*Obs.* The present species varies very considerably in size; but I cannot discover, after a most careful examination of a considerable series, that the difference is any thing but individual; for I find that the extreme variation exists in specimens from the same locality: thus the variation in the length of the wing in examples from North Africa is from 5·2 to 5·85; and I find nearly as much difference in specimens from other parts of Africa and India.

The range of the present species, as far as the Western Palæarctic Region is concerned, is restricted to the extreme southern and south-eastern portions; but it is found in Asia, eastward as far as Central India, and in Africa as far south as the Cape colony. In Europe, north of the Mediterranean, it is only known to have occurred in Greece and Turkey; and the statement made by Messrs. Degland and Gerbe that it straggles to Spain and Portugal lacks confirmation. Count von der Mühle (Orn. Griechenl. p. 83) gives an accurate description of it, and says that he has several times shot it in Greece in the summer; and Dr. Krüper says that it is only a rare bird in that country; Messrs. Sclater and Taylor observed it at Stamboul; and Strickland speaks of it as being numerous amongst the cypress trees in the Mahometan churchyards near Constantinople and Smyrna; and Dr. Krüper states that in Asia Minor he found it very common, and breeding at Smyrna and Axari. Canon Tristram writes (Ibis, 1868, p. 210) that it "is a permanent resident in Palestine, not increasing its number by migration, confined chiefly to the neighbourhood of the Dead Sea and the Lower Jordan, but residing throughout the year even in the courtyards of houses in Jerusalem and in the temple-area, where, from its tame and confiding habits, it appears to be semidomesticated." In North-east Africa it is a common species; and Captain Shelley, who says that it is very abundant in Egypt, adds that it is the only species which remains there throughout the year. Von Heuglin states that he did not observe it in the highlands of Abyssinia above 7000–8000 feet, and that on the White Nile it is rarer than in Nubia, Egypt, Arabia, and on the Abyssinian coast; and Mr. Blanford says that it is most abundant in Abyssinia in the subtropical belt, from 3000 to 6000 feet, but occurs both above and below these limits. It is found throughout the north of Africa, being resident and common in Algeria; and Mr. Salvin says (Ibis, 1859, p. 318) that he observed it in many places in the Regency of Tunis. According to Mr. C. F. Tyrwhitt-Drake it is common in the

southern portion of Morocco; but M. Favier does not record it from Tangier. Dr. C. Bolle records it from the Canaries, and says (J. f. O. 1857, p. 332) that "it is found every spring in Fuerteventura, and must nest there. Señor Don Francisco Manrique, who lives permanently on the above island, says that it most certainly inhabits the place. It is called there Tortola de Africa; and this is probably the reason which has led Ledru to the confusion with the tropical *Peristera afra*." On the west coast it is recorded from Senegal; and Mr. H. T. Ussher writes (Ibis, 1874, p. 71), it is "common in the eastern districts of the Gold Coast, and seems especially fond of the immediate vicinity of houses or villages. All those shot by me were obtained among the houses of Christiansborg and in the ruins of the fort, where they appear to build in some numbers. They are also to be met with near the little villages of the interior eastern districts; but I have not seen them in Fantee." Andersson states (B. of Damara Land, p. 232) that he met with it "abundantly from the Okavango river southwards throughout Damara Land and Great and Little Namaqualand, as also at Lake N'gami." Mr. E. L. Layard says (B. of S. Afr. p. 261) that it is found throughout the Cape colony. According to Mr. J. H. Gurney it is only known to him to have once occurred at Natal; but Dr. Kirk found it common on the Zambesi. Mr. Blanford includes it his list of birds occurring in Persia, as seen only in Baluchistan; but Eichwald says that it inhabits the west coast of the Caspian from Persia to Astrachan. Dr. Jerdon states (B. of India, ii. p. 479) that the present species is "found throughout the greater part of India, not occurring in Ceylon, Malabar, or Lower Bengal, nor in the countries to the eastwards, but very abundant in Central and especially in Western India, also in Sindh and the Punjab." Dr. Severtzoff says that it is resident in Turkestan; but it was not met with on the Yarkand expedition.

In habits the present species is much tamer and more sociable even than the common Turtle Dove, and especially so in Mahometan countries, where it is never molested and inhabits the gardens and courtyards in a semidomesticated state. Dr. A. E. Brehm, speaking of the habits of this bird, says (Erg. Reise Habesch, p. 376) that it is never met with in such large flocks as the Rock-Dove, but is quite as numerous as that species, and is found everywhere, both in the palm-groves and in every large garden in the middle of the villages and towns, and is never molested by the natives. It nests, without any attempt at concealment, often in a bush scarcely five feet above the ground; and he has frequently found nests on which the old bird was sitting, who when discovered evinced no sign of alarm, but remained quietly on her eggs, evidently certain that she would not be molested. Captain Shelley also writes (B. of Egypt, p. 217) respecting this species in Egypt as follows:—"It is very sociable and tame, and not so fast on the wing as the other species. In every palm-grove pairs may be seen sitting together on the long leaf-stems; and in the villages they may be found strutting along the mud walls which form the native houses. They have begun breeding by the end of February, both in trees and on the ground by the side of banks." Mr. J. H. Gurney, jun., sends me the following note:—"The Palm-Dove (*Turtur senegalensis*) frequents every kind of bush and tree. Hundreds of them roost in some orange-trees at a village near Benisouef; and a grove of dwarf palms is often a favourite resort. In the towns and villages there are always many; and it is usually the first bird one sees on landing at Alexandria, as they perch on the boats in the harbour. A pair settled one day on the awning of the diabeyha; and on another occasion one actually came into the cabin. The young

bird is brown, so unlike the old one that it might be taken for a different species. My attention was first drawn to the remarkable variation in plumage by shooting a very light-yellowish female on the 12th of March. Afterwards I found great difference in the tints, especially of the head and neck, which I could not reconcile in any way."

The nest of the present species is a very slight platform of sticks, like that of the common Turtle Dove; and its eggs resemble those of that species, but are slightly smaller in size.

The specimen figured is an adult male from Egypt, in my own collection, and is the bird above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Ghor el Safieh, Palestine, January 29th, 1864 (*H. B. Tristram*). *b*, ♂. Egypt, March 31st, 1870 (*G. E. Shelley*). *c*, ♂. Egypt, April 4th, 1870 (*G. E. S.*).

*E Mus. G. E. Shelley.*

*a*, ♂. Fayoom, Egypt, March 14th, 1871 (*G. E. S.*). *b*. Plains of Accra (*Ussher*). *c*. Cape of Good Hope. *d*. Zambesi (*Mellar*).

*E Mus. Brit. Reg.*

*a*, ♂, *b*, ♀. Jericho (*H. B. Tristram*). *c*, ♀. Egypt, April 1st, 1868 (*G. E. Shelley*). *d*, ♂. Tigre, Abyssinia, March 27th, 1868. *e*, ♀. Ailat, Abyssinia, June 27th, 1868 (*W. T. Blanford*). *f*, *g*. Tette (*Dr. Livingstone*). *h*. Niger Expedition (*Dr. Balfour Baikie*). *h*. Senegal (*Laglaize*). *i*, *j*. India (*Dr. Burns*). *k*, *l*. Kamptee, India (*Dr. Hinde*). *m*. Gangontra, India.

## Family PTEROCLIDÆ.

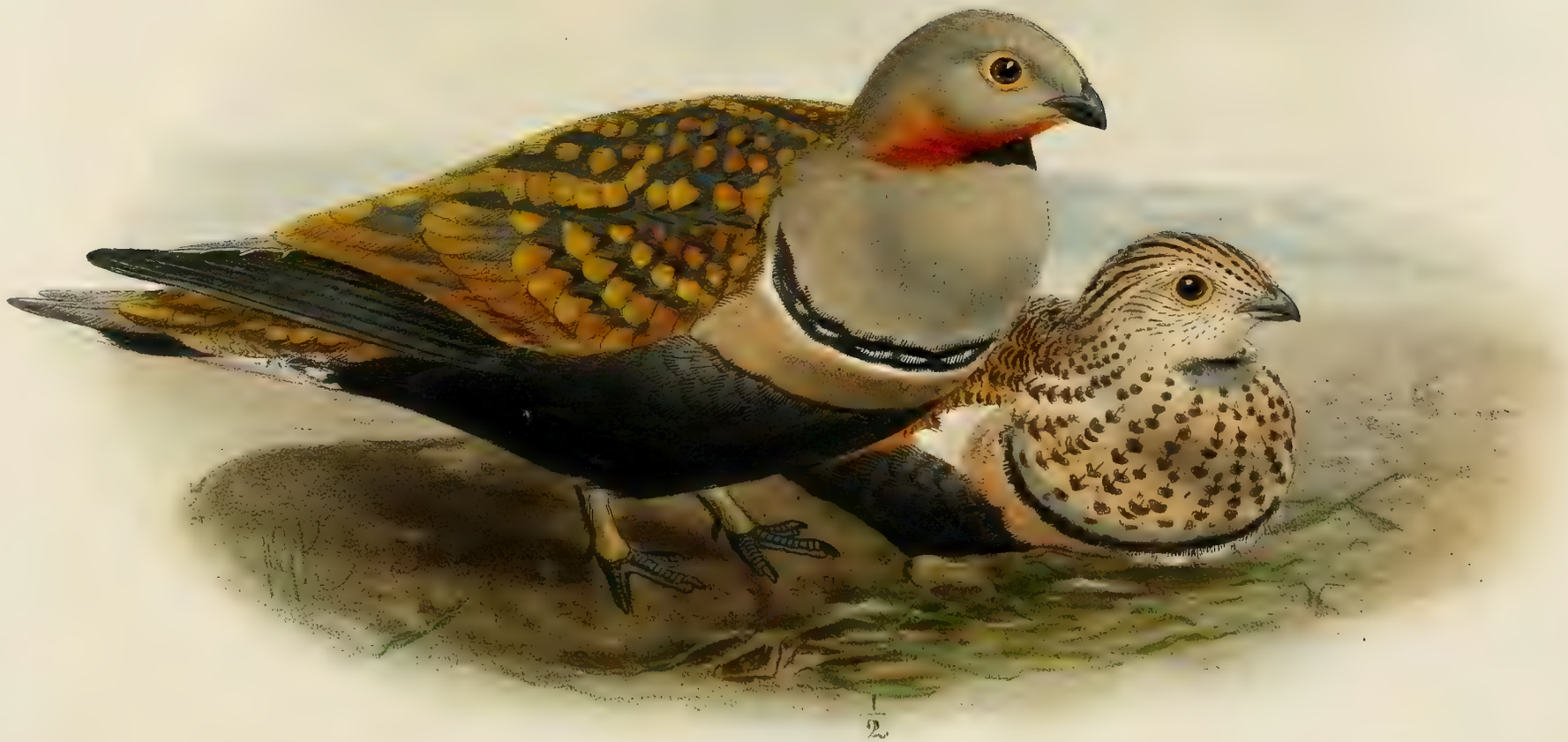
### Genus PTEROCLES.

*Lagopus* apud Brisson, Orn. i. p. 195 (1760).
*Tetrao* apud Linnæus, Syst. Nat. i. p. 276 (1766).
*Pterocles*, Temminck, Pig. et Gallin. iii. p. 240 (1815).
*Œnas* apud Vieillot, Nouv. Dict. xii. p. 418 (1817).
*Pteroclurus* apud Bonaparte, Compt. Rend. xliii. p. 880 (1856).

The Sand-Grouse resemble the Pigeons so closely in structure, and especially in the form of the sternum, that they cannot well be separated from them; and they appear to form, as it were, a link between them and the Gallinæ. The genus *Pterocles* is represented in the Palæarctic, Oriental, and Ethiopian Regions, two species only being found in the Western Palæarctic Region. It is very possible that two African species, *Pterocles exustus*, Temm., and *Pterocles senegallus* (L.), may straggle into the southern portion of the Western Palæarctic Region; but they cannot at present fairly be included in the list.

The Sand-Grouse, as their name implies, frequent sand plains, steppes, and open, treeless localities, usually dry and arid places; but they are also found in the stubble-fields in search of their food, which consists of seeds and shoots of plants &c. Their flight is direct, protracted, and very swift; and their cry is a loud, peculiar croak. They are gregarious, and are frequently seen in large flocks; and, like the Pigeons, they resort to regular drinking-places, which they usually visit in the morning and evening. They walk with tolerable ease considering their short legs, and will often travel considerable distances. They are monogamous, and nest on the ground, merely scratching a hole in which they deposit their eggs, usually three in number, which are ochreous or buff, marked with brown or rufous, and in shape rather elongated oval. When the young are hatched they are covered with down, but are somewhat helpless for several days, during which time they are fed by the mother, who disgorges food for them after the manner of the Pigeons, after which they are able to run about and search for food for themselves. It is stated by some observers that when the Sand-Grouse incubate they lie on one side, spreading one wing to cover the eggs, a position for which the deep keel of the sternum is admirably adapted.

*Pterocles alchata*, the type of the genus, has the bill short, stout, curved gradually downwards from the nostrils, and ending in an acute point; nostrils basal, elongated, oval, lateral, partly closed by a membrane, which is partly hidden by the feathers; wings very long, pointed, the first quill longest; tail moderate, wedge-shaped, the central rectrices elongated; legs short, tarsus stout, anteriorly feathered; hind toe rudimentary, anterior toes short, stout, united at the base by a membrane; claws short, stout, slightly curved, rather obtuse.



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J. Wolf & Son del

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**BLACK-BELLIED SANDGROUSE.**
PTEROCLES ARENARIUS

# PTEROCLES ARENARIUS.

(BLACK-BELLIED SAND-GROUSE.)

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*Tetrao arenaria*, Pallas, Nov. Com. Petrop. xix. p. 418. pl. 8 (1774).
*Sand-Grouse*, Latham, Syn. iv. p. 751 (1783).
*Tetrao fasciatus*, Desfont. Mém. de l'Acad. des Sc. p. 502 (1787).
*Aragonian Partridge*, Lath. Syn. Suppl. p. 223 (1787).
*Tetrao arenarius*, Pall., Lath. Ind. Orn. ii. p. 642 (1790).
*Perdix aragonica*, Lath. tom. cit. p. 645 (1790).
*Pterocles arenarius* (Pall.), Temm. Pig. et Gallin. iii. p. 240 (1815).
*Œnas arenaria* (Pall.), Vieill. N. Dict. xii. p. 423 (1817).

*Ganga unibande*, French; *Cortiçol*, *Barriga-negra*, Portuguese; *Corteza*, *Ortega*, *Churra*, *Churra Manchega*, Spanish; *Koudhre*, Arabic.

*Figuræ notabiles.*

Pallas, *l. c.*; Temminck, Pl. Col. 52, 53; Werner, Atlas, *Gallinacés*, pl. 9; Fritsch, Vög. Eur. taf. 32. figs. 9–13; Naumann, Vög. Deutschl. taf. 153; Gould, B. of Eur. p. 257.

♂ *ad.* pileo, nuchâ et collo postico pallidè cærulescenti-cinereis: dorso, scapularibus, uropygio et tectricibus alarum minoribus ochrascenti-aurantiacis grisescente nigro variegatis, uropygio saturatiore; remigibus saturatè cinereis, rhachibus nigris, primario primo in pogonio externo brunnescenti-cinereo, primariis intimis vix albido apicatis: secundariis in pogonio externo ochrascenti-aurantiaco notatis, intimis nonnullis scapularibus concoloribus: tectricibus alarum majoribus fere totis flavicanti-aurantiacis: caudâ brunnescenti-cinereâ, brunneo indistinctè fasciatâ et albido terminatâ: gulâ rufescente, mento pallidiore, colli lateribus rufescenti-aurantiacis, gulâ imâ maculâ magnâ nigrâ notatâ: jugulo et pectore cinerescenti-margaritaceis vix isabellino tinctis, pectore lineâ nigrâ transfasciatâ: abdomine nigro: tarsi plumis pallidè cervinis: subcaudalibus flavicanti-albidis: subalaribus et axillaribus albis.

♀ *ad.* corpore suprà ochrascenti-arenaceo, nigro fasciato: pileo, nuchâ et collo postico nigro striatis: remigibus saturatè brunnescenti-cinereis, secundariis extimis ad basin isabellinis nigricante marmoratis, secundariis intimis et tectricibus alarum dorso concoloribus, sed tectricibus majoribus valdè ochrascente aurantiaco terminatis: gulâ ochrascenti-flavâ, imâ nigro transfasciatâ: gutture imo et pectore superiore rufescenti-ochraceis nigro guttatis, pectore in parte inferiore lineâ nigrâ transfasciato: abdomine et corpore imo subtùs nigris: tibiæ et tarsi plumis sordidè et pallidè ochraceis: subcaudalibus albidis, subalaribus albis.

*Adult Male* (Ludjak, 24th June). Crown, nape, and hind neck pearl-grey, with a faint ashy tinge; back, scapulars, lesser wing-coverts, rump, and upper tail-coverts variegated greyish black and orange clay-colour, the feathers being at the base clay-orange, marbled with blackish, towards the centre crossed by a broad bar of greyish black, and finally broadly tipped with rufescent ochraceous; rump rather darker than the rest of the upper parts; quills bluish grey, shafts black, the first primary with the

entire outer web brownish grey, the inner primaries slightly tipped with white; secondaries marked on the outer web with orange-yellow, some of the inner ones closely approaching the scapulars in coloration; larger wing-coverts almost entirely orange-yellow; tail brownish ash, barred chiefly towards the base with indistinct blackish brown bars, and broadly tipped with white; chin and upper part of the throat rusty red, much paler on the chin, and on the sides of the neck becoming rusty orange, below this a large black mark; lower neck and breast pearl-grey, with an isabelline tinge; across the breast a clearly defined black stripe is carried to the base of the wings; abdomen black, slightly marked with creamy grey towards the breast; feathers on the lower tibia tipped with pale sandy buff, and feathers in front of the tarsus pale buff; under tail-coverts pale yellowish white; under wing-coverts and axillaries pure white; bill dull horn-brown; feet dull lead-grey; iris brown. Total length about 14½ inches, culmen 0·65, gape 0·7, wing 9·2, tail 4·1, tarsus 1·3.

A male in Canon Tristram's collection, killed in November, resembles the male above described; but the markings on the upper surface of the body are more blurred, and the upper parts generally are more rufous.

*Adult Female.* Upper parts pale sandy ochre, closely barred with black, except on the head, nape, and hind neck, where the black markings on the feathers are confined to the centres, and give those parts a striped appearance; primary quills dark greyish brown, the outer secondaries similarly coloured on the terminal portion, but at the base pale isabelline, marbled with blackish, inner secondaries and wing-coverts like the back, except that the larger coverts are broadly tipped with dull clay-orange; tail as in the male, but more distinctly marked; sides of the head clay-yellow, striped with black; upper throat clay-yellow on the lower part, crossed with a tolerably broad blackish stripe; lower throat and breast rufescent-ochre, marked with drop-shaped spots of black, and on the lower part crossed by a black band, below which there is a narrow space unspotted, the rest of the underparts being black, except the feathers on the lower tibia and tarsus, which are pale clay-yellow; under tail-coverts dirty white; under wing-coverts white.

*Young Male* (near Seville, 4th October). Head, neck, breast, and entire upper parts dull sandy yellow or pale ochre, barred and marked with black; feathers on the wing-coverts and breast with a subapical black bar following the contour of the feather; quills dull greyish black, broadly tipped with dull clay, slightly marbled with blackish brown, secondaries dull yellowish white, except at the base, where they are white, and broadly terminated with dull greyish black, slightly marbled with dull fulvous; elongated inner secondaries marked like the dorsal feathers, but slightly washed with fulvous; tail dull clay-yellow, washed with fulvous, and barred with black; abdomen black. This specimen is very young, as is shown by the short wings and the remains of down amongst the feathers on the breast, lower back, and on the under surface of the wings.

The Black-bellied Sand-Grouse inhabits South-western Europe (being found only in other parts of Southern Europe as a straggler), Northern Africa, and Western Asia. It has once occurred in Germany; and Naumann (Vög. Deutschl. vi. p. 265) says that a pair were seen, one of which was killed, in 1801 at Ziebigk, between Cöthen and Dessau, in Anhalt. It does not, however, appear to have occurred in France, though it is found in Spain and Portugal. The Rev. A. C. Smith speaks of it (Ibis, 1868, p. 450) as being common in open districts in Portugal; and Dr. E. Rey says that he believes he saw it at Algarve, and received its eggs from there. In Spain, according to Mr. Howard Saunders (Ibis, 1871, p. 223), "it is found on the coast in winter, but during the rest of the year prefers higher and more arid localities than *Pterocles*

*alchata*, which it almost replaces in La Mancha." And in a letter just received from Lord Lilford, he writes as follows:—"I have met with it in New Castile, near Aranjuez, in May 1865, in large flocks, and in the Marisma of the Guadalquivir in small parties at the same season in 1864, 1869, and 1872. I believe it to be a permanent resident in suitable localities throughout Spain, but not so abundant in Andalucia as *Pterocles alchata*." Temminck speaks of it as inhabiting Sicily; but this appears to have been a mistake, as none of the Italian naturalists has ever met with it. It has twice been recorded from Greece. Von der Mühle (Orn. Griechenl. p. 84) obtained one specimen which was shot between Megara and Thebes late in the autumn; and Lindermayer (Vög. Griechenl. p. 122) obtained another about the same time from Messogion, in the district about Hymettus.

Von Nordmann says that it is rare in New Russia, but more numerous in the eastern steppes and in those of the Caucasus. I do not find it recorded from Asia Minor; but Canon Tristram met with it in Palestine, and says (P. Z. S. 1864, p. 449) that Mr. Cochrane obtained it to the north-east of Hermon, and he also observed it in the same district. I do not find any record of its occurrence in North-east Africa; but it is found in the north-western portion of that continent. Loche states that he met with it in the large plains of the Sahara throughout the year, and in the plain of Chélif during the breeding-season. Mr. J. H. Gurney, jun., says that it is found in the northern portion of the Sahara; and Mr. Osbert Salvin writes (Ibis, 1859, p. 353), it "is found in the same localities as *Pterocles alchata*; but it also occurs about Djendeli and the Madracen, where I never met with that species." Mr. W. T. Chambers-Hodgetts met with it in Tripoli, and writes (Ibis, 1867, p. 103) as follows:—"While wandering near the waterfall just after sunset, I was delighted at hearing the unmistakable clucking of Sand-Grouse, and soon perceived large quantities flying high overhead due south. An Arab informed me they constantly came to drink at this spot early. Next morning at break of day I was on the look-out. No Sand-Grouse, however, made their appearance; and my Arab, ever ready with an excuse, assured me that it was too cold; but the next day on leaving Turhona, and travelling over a sandy plain covered with rough grass, I fell in with them in great numbers, though they were so wild that I could not once get within range. Their size and black breasts showed them to be *Pterocles arenaria*; but the Arabs asserted that two other species are also found there." According to F. Schousboe (J. f. O. 1857, p. 333) it is common during the winter on the plains near Morocco, and found even to the foot of the Atlas, but it is rather rarer at Tangier. Lord Lilford informs me that he met with large flocks of this species on the plains near Tunis in November and December 1856.

It occurs in the Canaries, where, according to Dr. C. Bolle (J. f. O. 1855, p. 173), "it is a resident in the deserts of Fuerteventura, whence it occasionally straggles over to Gran Canaria;" and he further writes (J. f. O. 1857, p. 332) that it is not uncommon in the south-eastern portions of Canaria, at Juangrande and Sardinas; but it is uncertain as to whether they breed there or only come over from the Tierra del Moro.

To the eastward it extends to the plains of India; De Filippi records it from Persia, and Messrs. Dickson and Ross say (P. Z. S. 1839, p. 121) that it is "very common near Erzeroom, and is said to breed, towards the end of April, on the adjoining hills, amongst loose stones. Arrives in the beginning of April; they are then seen in those fields that are free from snow, close to the

town. In summer frequents bare sterile grounds. Quits Erzeroom about the end of September." Mr. A. O. Hume speaks (Stray Feathers, i. p. 219) of it being "met with occasionally in Upper Sindh (I did not myself see it lower than Sehwan, though I heard of its occurrence), but never in any thing like the numbers in which it occurs throughout the North-west Punjab and parts of Rajpootana. In fact, as far as I could see and learn, the only Rock-Grouse which occurred in very great numbers were *P. alchata* and *P. senegallus*." Dr. Jerdon (B. of India, ii. p. 497), as "found only in the North-west Provinces nnd Sindh, rarely extending as low as Allahabad, tolerably abundant in the Punjâb, and said to be very numerous towards the edges of the great desert. It is recorded in the Bengal 'Sporting Magazine' as "common in the Doab between the Ganges and Jumna, near Futteyghur, in Rohilcund, near Ferozepore, in Hurriana, and in various parts of the Punjâb. I have heard of its having been killed near Nusseerabad and also in Khandeish. It is only a winter visitant to India, arriving towards the end of September and leaving in March." Severtzoff (Turk. Jevotnie, p. 68) speaks of it as being common throughout Turkestan, where it breeds, to an altitude of about 4000 feet.

The Black-breasted Sand-Grouse is essentially an inhabitant of the plains and flat open country, especially dry arid deserts and steppes where there is a wide expanse of sand and but few or no bushes; but it often frequents the stubble-fields in search of food. Lord Lilford, who has frequently obtained it in Spain, informs me that "it is a very wary bird, and only to be shot by chance, except by stalking with a horse or by waiting in ambush at their drinking-places. It breeds in the marisma and many other parts of Spain, the usual number of eggs deposited being three; and several pairs generally nest in close proximity to each other. They are very fast on the wing, and get up with a rattling of wings like a flight of pigeons, and have a loud and peculiar croaking cry. In Andalucia they are called 'Corteza,' in some parts of Spain 'Ortega,' and in others 'Churra' or 'Churra Manchega.' I have often kept them alive; they become very tame, and feed readily on any kind of grain, wheat, barley, millet, canary-seed, hemp-seed, &c. In my estimation the flesh is very poor eating, but better than that of *Pterocles alchata*." Dr. C. Bolle says that they are snared in the Canaries by placing nooses in a small path leading to their drinking-places, made by putting rows of stones, over which, owing to the shortness of its legs, the Sand-Grouse will not step.

Dr. Jerdon, writing on its habits in India, says (*l. c.*) that "it frequents extensive open sandy plains, flies in vast flocks, being said to be more abundant than *P. exustus* in those parts where it does occur. Like the others of this tribe, it goes regularly to certain spots on the banks of rivers or tanks to drink, which it does twice a day; and it is fond of basking in the sun and rolling on the sand. One writer records that he saw them about sunrise leave their roosting-places among sand-hills and collect in thousands on a hard bare plain, close to where they usually drank, but that they were neither feeding nor drinking at that early hour, and came there, he suggests, for the sake of basking in the early sun's rays. It feeds on grassy plains, and also on stubble-fields, and does so especially immediately after drinking. The flight of this Sand-Grouse is said to be amazingly strong and rapid; and when roused, it flies to great distances. It is generally said to be a shy and wary bird, and difficult to approach closely, from the open nature of the country it affects; it is highly esteemed as a game bird, and much sought after by many sportsmen, as well for the difficulty of close access, as for its qualities on the table. It is

stated that, from the closeness and firmness of its plumage, it takes a good gun and heavy shot to bring it down. A writer records the great preponderance of one sex in every flock, sometimes killing seven or eight females and not one male, and *vice versâ*. The flesh is mixed brown and white on the breast; and though somewhat tough when fresh, and perhaps requiring to be skinned, it is reckoned delicious eating; indeed one writer says that it is the finest game bird for the table in India. Shooting them from a hole dug in the ground near their drinking-spots is said to be a very deadly way of making a good bag; and this I can readily believe. It is caught in the neighbourhood of Peshawur and other places in horse-hair nooses."

Its nest is said to be a mere depression in the soil scratched out by the bird; and three are the number of eggs usually deposited. I possess several eggs collected at Arganda, in Spain, early in June. In shape they are oval, rather elongated, tapering equally towards each end, and in colour are light stone-colour or buff, more or less marbled with very indistinct purplish grey underlying shell-markings and light brown overlying surface-blotches, which latter in some of the specimens are drawn in fantastical shapes; and in most of the eggs the dark markings are more or less collected round one end. In size they vary from $1\frac{34}{40}$ by $1\frac{12}{40}$ to 2 inches by $1\frac{14}{40}$. Canon Tristram writes (Ibis, 1860, p. 70), "the eggs are placed two in a line, and the third lengthwise outside them, in a depression in the sand without any nest. The bird in sitting, as I have observed, lies on one side, spreading out one wing to cover the eggs, thus presenting a grotesque lopsided appearance; but it is a position for which the deep keel of her sternum admirably adapts her."

The specimens figured are an adult male and female from my own collection, these being those I have above described; but the young bird I have also described is in the collection of my friend Mr. Howard Saunders.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

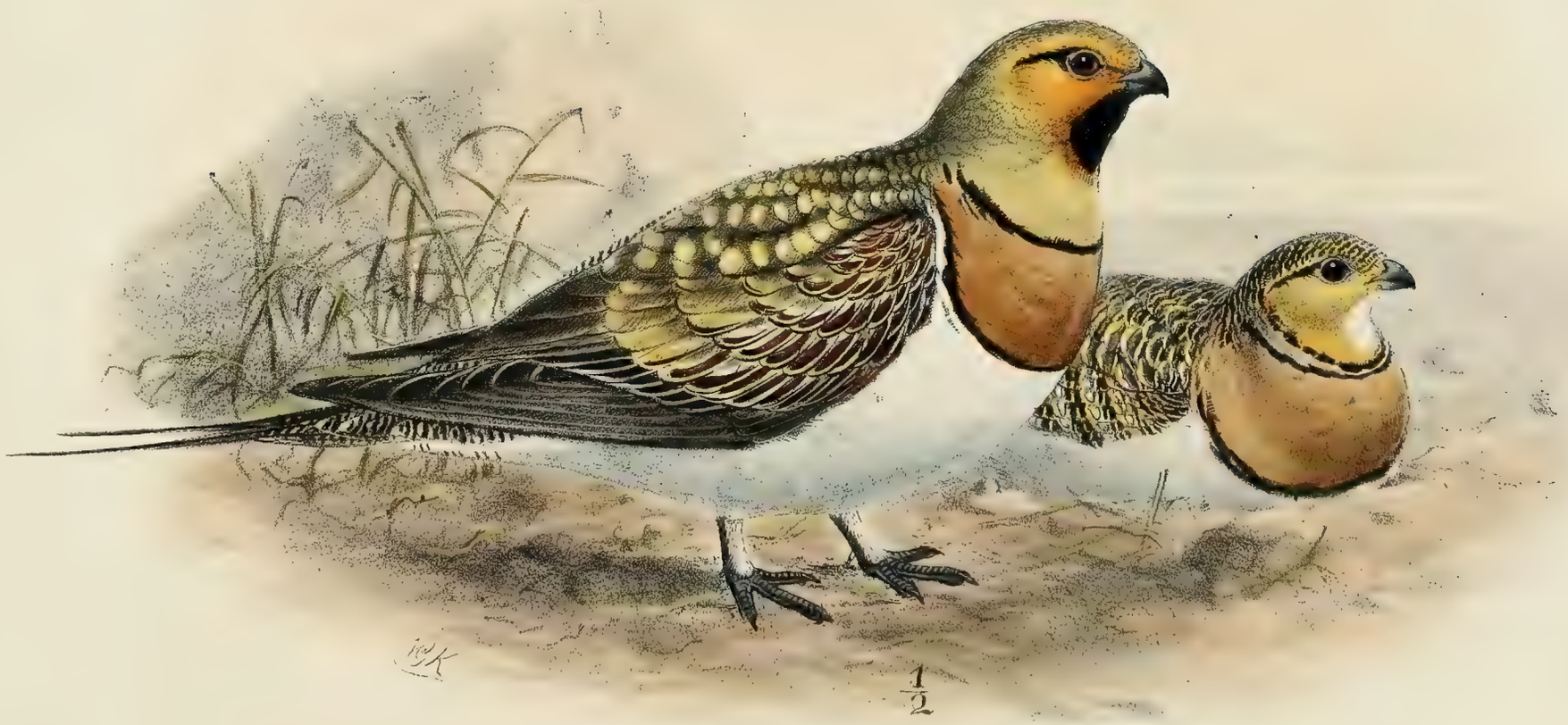
*a*. Southern Spain (*Saunders*). *b*, ♂. Cordova, Spain, January 3rd, 1872 (*Lord Lilford*). *c*, ♀. Spain (*Lord Lilford*). *d*, ♀. Ludjak (Ladak?), December 11th, 1864. *e*, ♂. Ludjak, June 24th, 1864. *f*. Punjab, 1868 (*Marshall*).

*E Mus. H. B. Tristram.*

*a*, ♂, *b*, ♀. Laghouat, Sahara, November 1856 (*H. T. B.*).

*E Mus. Howard Saunders.*

*a*, ♂. Seville district, March 28th, 1869. *b*, ♂, *c*, ♀, *d*, *juv*. October 10th, 1868.



1/2

W. Keulemans del

PINTAILED SANDGROUSE.
PTEROCLES ALCHATA.

# PTEROCLES ALCHATA.

(PIN-TAILED SAND-GROUSE.)

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*The Little Pin-tailed Grous*, Edw. Gleanings, p. 84, pl. 249 (1758).
*Bonasia pyrenaica*, Briss. Orn. i. p. 195, pl. 19. fig. 1 (1760).
*Tetrao alchata*, Linn. Syst. Nat. i. p. 276 (1766).
*Pterocles setarius*, Temm. Pig. et Gallin. iii. p. 256 (1815).
*Œnas cata*, Vieill. Nouv. Dict. xii. p. 418 (1817).
*Pterocles alchata*, Licht. Verz. Doubl. p. 64 (1823).
*Tetrao chata*, Pall. Zoogr. Rosso-As. ii. p. 73 (1831).
*Pterocles caspius*, Ménét. Cat. Rais. p. 47 (1832).
*Pteroclurus alchata* (L.), Bp. Compt. Rend. xlii. p. 880 (1856).

*Ganga cata*, French; *Cortiçol*, Portuguese; *Ganga*, Spanish; *Grandule*, Italian; *el Guett'ha*, Arabic.

*Figuræ notabiles.*

Edwards, *l. c.*; D'Aubenton, Pl. Enl. 105, 106; Werner, Atlas, *Gallinacés*, pl. 10; Fritsch, Vög. Eur. taf. 32. fig. 10; Gould, B. of Eur. pl. 258; Roux, Orn. Prov. pls. 248, 249.

♂ *ad.* pileo, nuchâ et collo postico saturatè brunnescenti-cinereis flavido lavatis: dorso et scapularibus brunnescenti-cinereis, plumis omnibus fulvescente flavido terminatis: remigibus primariis (primo excepto) in pogonio externo sordidè canis et in pogonio interno brunnescenti-cinereis, rhachibus et primario primo in pogonio externo nigris, secundariis in pogonio interno sordidè albis et in pogonio externo saturatè brunnescenti-cinereis vix albido marginatis, secundariis intimis elongatis sordidè brunneis: tectricibus alarum omnibus ad basin saturatè cinereis, in medio pallidè canis, versus apicem lætè castaneo-rufis, ante apicem flavidis et vix nigro apicatis: tectricibus majoribus nonnullis extimis eodem modo coloratis, sed intimis ad basin saturatè cinereis, versus apicem fulvo-flavidis et nigro apicatis: uropygio et supracaudalibus flavicantibus, nigro fasciatis: rectricibus duabus centralibus valdè elongatis, versus apicem attenuatis, brunneis, ad basin tectricibus concoloribus: rectricibus reliquis in pogonio externo nigro et flavido fasciatis, in pogonio interno nigricanti-cinereis et conspicuè albo terminatis: gulâ et striâ infra oculos nigerrimis: capitis lateribus fulvo-flavidis, striâ supraoculari areâque gulam circumeunte rufescenti-fulvis, collo reliquo anticè et lateraliter fulvo-flavido: pectoris fasciâ latissimâ cinnamomeo-rufâ, suprà et infrà strictè nigro marginatâ: abdomine, crisso tarsorumque plumulis albis: subcaudalibus nigricanti-cinereis, sordidè flavido fasciatis et albo terminatis: subalaribus interioribus albis, exterioribus fuliginosis: rostro brunnescenti-corneo, pedibus plumbescenti-brunneis: iride fuscâ.

♀ capite et corpore suprà flavicantibus, nigro et cinereo fasciatis, dorsi plumis et scapularibus nonnullis fasciâ subapicali lætè cærulescenti-cinereâ notatis: remigibus ut in mare coloratis sed pallidioribus: tectricibus alarum rufescenti-ochraceis, cærulescente cinereo et nigro-fusco fasciatis, ante apicem cærulescente margaritaceo et flavido fasciatis et vix nigro apicatis: caudâ ut in mare: gulâ albidâ: colli lateribus et genis fulvo-flavidis vix rufescente tinctis: pectoris fasciâ fulvo-cinnamomeâ utrinque nigro marginatâ: corpore subtùs imo ut in mare.

*Adult Male* (Seville, May). Crown, nape, and hind neck dark ashy grey, with a brown tinge, and washed with yellowish; back and scapulars dark brownish ash, all the feathers broadly terminated with dull golden yellow; primaries bluish ash on the outer web, and dark ashy brown on the inner web, except the first quill, which has the outer web black except at the extreme tip; shafts of the primaries black; secondaries dull white on the inner web, and dark ashy brown narrowly margined with white on the outer web, excepting the rather elongated innermost secondaries, which are dull brown; smaller and median wing-coverts dark bluish ash at the base, becoming pale dove-colour towards the terminal portion, which is rich chocolate-red, bordered with sulphur-yellow, and with a narrow apical border of black; some of the outer larger coverts similarly coloured; but the inner ones are dark ash at the base, then dull golden yellow, and narrowly bordered with blackish; rump and upper tail-coverts light yellowish, closely and distinctly barred with black, the two central rectrices much elongated and narrowed towards the tip, the basal portion coloured like the tail-coverts, and the terminal portion blackish brown; remaining rectrices blackish ash on the inner web, barred like the coverts on the outer web, and broadly terminated with white; sides of the head dull golden yellow over the eye, and on the sides of the throat rufescent-orange; chin, upper throat, and a broad line behind the eye jet-black; lower part of the throat dull golden-yellow, below which there is a broad chestnut-red band across the upper part of the breast, bordered above and below with black; rest of the underparts and under wing-coverts white, except the under tail-coverts, which are blackish grey, barred with dull yellowish, and broadly tipped with white, and the outer edge of the underpart of the wing is dull blackish; beak dull horn-brown; bare space round the eye dull lead-grey; iris dark brown; feet dull greyish brown. Total length about 14 inches, culmen 0·65, wing 7·3, tail 5·3, tarsus 1·15.

*Adult Female* (Seville, May). Upper parts rich yellowish, closely barred with black and ashy grey; and on the back and scapulars most of the feathers have a broad subterminal ashy blue band; quills as in the male, but paler and bluer; wing-coverts barred at the base with black on a rusty yellow ground, then crossed by a broad band blue-grey, and one of clay-yellow, and narrowly tipped with black; tail as in the male; chin and centre of the throat white, not black; sides of the throat and neck yellow, with a warm slightly reddish tinge; the pectoral band much paler than in the male, and bordered by two black bands above and one below; rest of the underparts as in the male. In size this specimen and others I have are fully equal to the males.

*Obs.* Judging from the series I have examined, the winter plumage does not differ from that worn in the summer.

*Young Female* (near Seville, 20th October). Upper parts dull fulvous clay-coloured, barred with black, except that in the interscapulary region and the larger wing-coverts and elongated inner secondaries the ground-colour is much brighter, almost golden yellow; quills as in the adult, but tipped with dull fulvous and white; here and there amongst the lesser wing-coverts one of the characteristic feathers of the adult plumage is pushing its way through; central rectrices much less elongated than in the adult; chin and upper throat white; sides of the head and neck and entire breast dull fulvescent buff, closely marked or barred with black; rest of the underparts white, except that on the centre of the abdomen the feathers are tipped with black, and the under tail-coverts are as in the adult.

*Young Male.* A young male obtained near Seville on the 10th of November is much more nearly in adult plumage than the bird last described, the breast, wings, and tail being as in the adult male; but the back is partly in the adult plumage and to some extent the feathers are as in the young female, the head and upper neck being also coloured as in that specimen; but the feathers on the chin and upper

throat are intermixed with black, and the lower throat above the red pectoral band is just assuming the adult plumage.

*Nestling* (*fide* Loche). Covered with reddish down, variegated with brown and rusty red.

This Sand-Grouse, like its congener *Pterocles arenarius*, inhabits Southern Europe and North Africa, and ranges eastward into the western portion of India. It is stated by Borggreve (Vogelf. Nord-Deutschl. p. 101) to have once occurred at Hanover; but I have no other record of its having been found so far north in Central Europe. It is said to inhabit the flat portions of the south of France, where it is resident and is found more especially in the arid plains of Crau, in Provence; and Baron von Müller says (J. f. O. 1856, p. 227) that it is so numerous there that a bird-catcher, who made the catching of Sand-Grouse his speciality, occasionally brought as many as fifty pair or more at once to him. According to Degland and Gerbe (Orn. Eur. ii. p. 24), it straggles to the northern departments, and a young male was killed near la Bassée. In Portugal, according to the Rev. A. C. Smith (Ibis, 1868, p. 451), it is by no means rare, though not so common as *Pterocles arenarius*; and in Spain it is a common species in suitable localities. Mr. Howard Saunders (Ibis, 1871, p. 223) says that it is "abundant in Andaluçia, where it breeds in May;" and Lord Lilford also informs me that it is common and resident in Southern Spain, on the plains and in the flat country.

It has been recorded as having occurred in Italy; but Salvadori has been unable to satisfy himself as to the authenticity of these recorded occurrences; and Doderlein denies that it has been obtained in Sicily, at least during his time. It has, however, occurred at Malta; and Mr. C. A. Wright says (Ibis, 1864, p. 139), "Schembri records the capture of several examples at Marsascirocco (a bay on the south-east coast of Malta), at the Marsa, and on the islet of Comino, all in April 1843. Since then I have not heard of any others having been taken." It has been met with in Greece, but only as a very rare straggler, as Von der Mühle says (Orn. Griechenl. p. 84) that he observed one between Nauplia and Epidaurus, and procured a specimen from Eubœa. I can find no record of its ever having been met with in Southern Germany; nor does it appear to have occurred in Turkey in Europe; but Von Nordmann states that it is found in Southern Russia, where it is very rare in the Ekaterinoslaw district, but common in the Caucasus and along the Araxes; Eversmann speaks of it (J. f. O. 1853, p. 292) as inhabiting the Kirghis steppes, near Lake Ural; and Ménétries, who described it as new under the name of *Pterocles caspius*, says (*l. c.*) that it is tolerably rare in the steppes not far from Bakou in the month of April. It is found in Asia Minor; and in a letter received some time ago from Dr. Krüper he informs me that it breeds near Smyrna, on the extensive sand-plains which skirt the river. Canon Tristram did not obtain a specimen when in Palestine; but he saw it several times in flocks, and says (P. Z. S. 1864, p. 449) that he has "no hesitation in enumerating it as a Palestine species." In North-east Africa it is recorded by Von Heuglin (Orn. N.O.-Afr. p. 855) as occurring in the Syrten, and from the vicinity of Beni-Ghazi, but was not met with by Captain Shelley in Egypt, where it does not appear to occur. It is common in North-western Africa, where it inhabits the sand-plains; and Mr. O. Salvin (Ibis, 1859, p. 352) says that the only localities where he met with it in Algeria were the extensive sand-plains termed the Harakta, of which El Tharf is one of the largest. Dr. Tristram says (Ibis, 1860,

p. 70) that it does not approach so near the verge of cultivation northwards as *Pterocles arenarius*, but is far more abundant, and continues to occur in vast flocks in winter in the Mzab and Toureg country, where he never met with that species. Mr. L. Taczanowski speaks of it (J. f. O. 1870, p. 51) as being common in the Algerian deserts, but not so numerous as on the neighbouring hills; and Mr. J. H. Gurney, jun., informs me that he frequently saw it when in Algeria, where amongst the French colonists it is known by the very inappropriate name of "Perdrix anglaise." Mr. C. F. Tyrwhitt-Drake records it from Tangier; and Von Heuglin speaks of it (J. f. O. 1862, p. 415) as inhabiting Tripoli, and in his recent work (Orn. N.O.-Afr.) describes a female from there. There does not appear to be any proof of its having been met with on the Canaries; but Dr. Carl Bolle says (J. f. O. 1857, p. 333) that he thinks it probable that it has occurred there, as Viera speaks of having obtained Sand-Grouse which had some of the tail-feathers twice the length of the others.

To the eastward the present species is found as far as the Punjab and Sindh. De Filippi records it from Persia; and Mr. Blanford informs me that he also met with it there not uncommonly. Mr. A. O. Hume writes (Stray Feathers, i. p. 221) as follows:—"I never myself succeeded in shooting a single specimen of this species while in Sindh; but I saw one or two flocks of it some few miles west of Jacobabad, and I was assured by an officer there, who is not only a first-rate sportsman but somewhat of an ornithologist also, that in this north-west corner of Sindh they arrive in spring in countless multitudes, and are incomparably more numerous at that time than all the other Sand-Grouse put together. They appear to remain for only a very short period. For about three months in midwinter this species, known to local sportsmen as the Painted Rock-Grouse, is abundant about Murdan, near Attock, in parts of the Peshawar valley, Abbotabad, and some isolated localities in Huzara. Nowhere in India does it descend far into the plains." Dr. Jerdon says that it is found in the Punjab and Sindh, and is, comparatively speaking, a rare bird in India, only a few finding their way across the Sutlej; it is, he states, recorded to have been killed at Hansi. Severtzoff (Turk. Jevotnie, p. 68) speaks of it as being "found throughout Turkestan, except in the north-eastern districts, where it has hitherto not been observed. It breeds in the Karatau and Thian-Shan ranges, at an altitude of from 1000 to 4000 feet above the level of the sea."

In its habits the Pin-tailed Sand-Grouse does not appreciably differ from the Black-bellied Sand-Grouse. Loche says (Expl. Sc. de l'Alg. Ois. ii. p. 233) that it is very common in the Sahara, and occurs on the plains of Habra, Chélif, and Batna, but never approaches the coast. It is shy and very wild, lives in large flocks, except during the breeding-season, feeds on seeds, insects, and the leaves of various wild plants, and is especially partial to the seeds of *Arthraterum pungens*. When in flocks they frequently traverse great distances on the wing in search of water; and during their flight they utter their loud note, *kaat*, *kaat*, *ka*.

It is monogamous, and appears greatly attached to its mate during the breeding-season. Its nest is a mere depression in the sand, under shelter of a stone, or quite in an open situation; and it lays two or three, very rarely four, eggs. In Spain, however, it appears only to lay two or three, and never four eggs, as stated by Loche; and Lord Lilford informs me that it breeds not uncommonly in some parts, depositing its eggs, as stated by Loche, in a mere depression in the ground, either in the sandy plains or in fallow land.

Its eggs are in shape similar to those of *Pterocles arenarius*, but are much richer-coloured and more boldly marked. I possess eggs from Algeria and Arganda, in Spain, which in colour are warm clay-coloured or stone-ochre, with a faint reddish cream-tinge, and are marked with faint purplish grey underlying shell-markings and dark reddish brown surface-spots and blotches, which are scattered tolerably closely over the surface of the egg. In size they vary from $1\frac{28}{40}$ by $1\frac{9}{40}$ to $1\frac{39}{40}$ by $1\frac{10}{40}$ inch, eggs from Algeria being both the palest and smallest.

Mr. Salvin says that the eggs are laid in May, the young being hatched about the second week in June. According to Loche, the young when they emerge from the shell are covered with down, but are helpless, or at least unable to run, being fed by the mother, who disgorges the food for them after the manner of a Pigeon; but after a few days they are able to run and to search for their own food. Should, however, there be no water in the immediate vicinity, the mother brings it to them until they are able to fly.

The specimens figured are the adult male and female described, and are in my collection, the young bird described being in the collection of Mr. Howard Saunders.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Seville, Spain, May. *c*, ♂, *d*, ♂, *e*, ♀. Seville (*Lord Lilford*).

*E Mus. H. B. Tristram.*

*a*, *b*. Spain, November 1867. *c*, ♂. Laghouat, Sahara, November 5th, 1856 (*H. B. T.*). *d*, ♀. Sahara, November 14th, 1856 (*H. B. T.*).

*E Mus. Howard Saunders.*

*a*, ♂ *ad.* Near Seville, April 22nd, 1869 (*H. S.*). *b*, ♀. Near Seville, May 18th, 1870. *c*, ♂, *d*, ♀. Near Seville, November 10th, 1869. *e*, ♂ *ad.* Near Seville, June 4th, 1868 (*H. S.*). *f*, ♀ *juv.* Near Seville, October 20th, 1869.

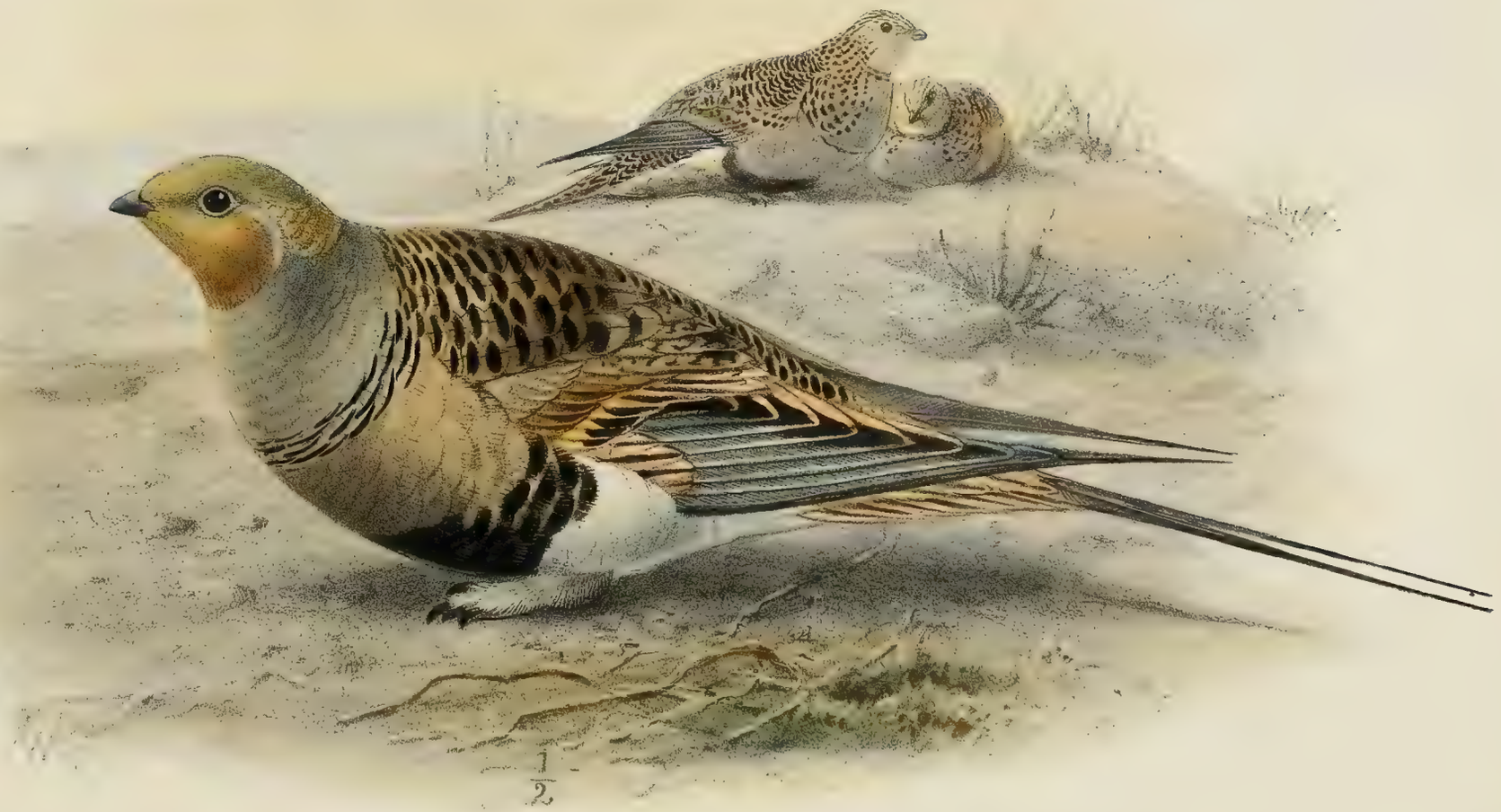
## Genus SYRRHAPTES.

*Tetrao* apud Pallas, Reise Russ. Reichs, ii. App. p. 712 (1773).
*Syrrhaptes*, Illiger, Prodr. p. 243 (1811).
*Nematura* apud Fischer, Mem. Soc. Nat. Mosc. iii. p. 271 (1812).
*Heteroclitus* apud Vieillot, Nouv. Dict. xiv. p. 453 (1817).
*Pterocles* apud Swainson, Classif. of B. ii. p. 343 (1837).

In many respects the species belonging to the present genus closely resemble the true Sand-Grouse, but they differ widely in the form of the foot, and in having the legs and toes closely feathered to the claws.

These birds inhabit the steppes of the Eastern Palæarctic Region, one species being found as a rare and sporadic straggler in the Western Palæarctic Region. In habits these birds assimilate closely to the species belonging to the genus *Pterocles*. They are gregarious, frequently consorting together in large flocks, and inhabit vast steppes and sand plains. Their flight is extremely rapid; and they make a peculiar whistling sound when flying. In the morning and evening they resort to their regular drinking-places, which are frequently far distant from their feeding-grounds. Their call-note is a somewhat melodious chuckle, which is often uttered when they are on the wing. They feed on soft shoots, seeds, and berries of various kinds which are found in the steppes. They do not construct any nest, but place their eggs in a depression in the ground, usually depositing three buff eggs, marked with dark brown. The young birds when hatched are covered with down, and are able to shift for themselves, like the young of the Gallinæ.

*Syrrhaptes paradoxus*, the type of the genus, has the bill very small, straight, gradually decurved from the base to the point, which, though obtuse, is sharp-edged; nostrils basal, concealed by the frontal feathers; wings very long and pointed, the first quill longest, and having the tip much elongated and attenuate; tail rather long, much graduated, the central rectrices much elongated, and attenuated to fine points; legs short, closely feathered to the toes, which are only separated close to the claws; soles of the feet rugous; claws stout, curved, obtuse.



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J.G.Keulemans lith

M& N Hanhart imp

PALLAS' SANDGROUSE.

SYRRHAPTES PARADOXUS

# SYRRHAPTES PARADOXUS.

(PALLAS'S SAND-GROUSE.)

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*Tetrao paradoxa*, Pall. Reise Russ. Reichs, ii. App. p. 712, tab. F (1773).
*Syrrhaptes*, Illig. (*Tetrao paradoxa*, Pall.), Prodr. p. 243 (1811).
*Syrrhaptes pallasii*, Temm. Pig. et Gallin. iii. p. 282 (1815).
*Heteroclitus tartaricus*, Vieill. Nouv. Dict. xiv. p. 453 (1817).
*Syrrhaptes paradoxus* (Pall.), Licht. in Eversm. Reise nach Buchara, p. 134 (1823).
*Syrrhaptes heteroclita*, Vieill. Gal. des Ois. pt. iii. p. 64 (1825).

*Syrrhapte paradoxal*, French; *Fausthuhn*, German; *Steppehöne*, Danish.

*Figuræ notabiles.*

Temminck, Pl. Col. 95; Fritsch, Vög. Eur. taf. 32. fig. 12; Sundevall, Svensk. Fogl. pl. 73. fig. 4; Gould, B. of G. Brit. iv. pl. 11; Radde, Reis. Süd. Ost-Sib. ii. pl. 2; Ibis, 1860, pl. iv.; Stevenson, B. of Norf. pl. 2.

♂ *ad.* pileo et capitis lateribus aureo-flavis, fronte vix nigro striatâ: nuchâ griseo-cervinâ, collo postico cano-cervino plagâ aurantiacâ notato: corpore suprà cum scapularibus arenaceo-ochraceis, nigro-fasciatis, uropygio fasciis angustioribus notato: remigibus primariis pallidè cæruleo-canis, primo in pogonio externo nigro et ad apicem valdè attenuato et elongato, sequentibus versus apicem attenuatis, primariis intimis versus apicem nigris et ochraceo terminatis, secundariis in pogonio interno ochraceis et extùs nigris vix ochraceo marginatis: tectricibus alarum arenaceo-ochraceis, marginibus nigro-guttatis, tectricibus majoribus rufescente castaneo terminatis: supracaudalibus et rectricibus centralibus in parte basali ochraceis cæruleo-cano notatis, his valdè elongatis et attenuatis, versus apicem nigricantibus, rectricibus reliquis schistaceo-cinereis albo terminatis et in pogonio interno ochraceo marginatis: mento pallidè flavido; gulâ supremâ aurantiacâ: corpore reliquo subtùs cano-cervino, versus crissum albido: abdomine plagâ magnâ nigro fasciatâ et plumis in pectore versus apicem nigro transfasciatis fasciam formantibus: subcaudalibus nigris vix ochraceo notatis et conspicuè albo marginatis: rostro pallidè corneo: iride fuscâ: pedibus lanatis.

♀ *ad.* capite et collo haud aurantiaco et flavo notatis, sed pileo et nuchâ nigro striatis, corpore suprà magis nigro variegato, tectricibus alarum ubique nigro guttatis, primario primo et rectricibus centralibus minus elongatis, et corpore subtùs sordidiore et grisescentiore quam in mare, gulâ nigro fasciatâ et pectoris lateribus nigro guttatis.

*Adult Male* (Tientsin, December). Crown and sides of the head dull golden-yellow, the forehead slightly striated with black; nape greyish buff; across the hind neck is a patch of golden-orange, which extends upwards on each side, rest of the hind neck buffy dove-grey; back and scapulars warm sandy ochreous, boldly barred with black, the rump similarly coloured, but the bars are narrower; primary quills delicate blue-grey, the outer ones much pointed, the first black on the outer web and having the tip very long and attenuated, the inner primaries black towards the tip, and broadly terminated with warm

ochreous; secondaries ochreous on the inner web, and black on the outer web, slightly margined with ochreous; wing-coverts sandy ochreous, spotted with black along the edge of the wing, the larger coverts terminated with deep fox-red, almost chestnut; tail-coverts, and central rectrices on the basal portion, warm ochreous marked with blue-grey, the central rectrices very much elongated and attenuated, the terminal portion being blackish; remaining rectrices dark slate-grey, broadly tipped with white, and marked with warm ochreous on the margin of the inner web; chin pale yellowish; upper throat golden-orange; rest of the underparts delicate dove-buff with a grey tinge, fading to dull white on the lower abdomen; across the centre of the body is a broad black band, and the upper breast is crossed by a band formed by the tips of the feathers being barred with black; under tail-coverts black, slightly varied with warm ochreous, and very broadly margined with white; bill pale horn-colour; iris dark brown; legs and feet covered with short, buffy white feathers. Total length about 15 inches, culmen 0·5, wing 9·0, first primary extending 1·1 beyond the second, tail 7·6, central rectrices extending 3·6 beyond the rest, tarsus 1·1.

*Adult Female* (Cologne). Differs from the male in lacking the yellow and orange colour on the head and neck, the crown and nape being striated with black; the upper parts are more varied with black; the wing-coverts are spotted with black; the first primary and central rectrices are much less elongated than in the male; the underparts are duller and greyer; the upper throat crossed by a black band; the sides of the upper breast and neck are boldly spotted with black.

*Young Male* (Tientsin). Differs from the old male in having the yellow on the head duller, the crown marked with black; the upper parts marked more as in the female; the sides of the neck spotted with black, and the band across the lower throat wanting.

An inhabitant of the Asiatic steppes, and found as far east as China, the present species has been met with as a straggler in many parts of Europe. Professor Newton, in his comprehensive article on the irruption of this species in 1863 (Ibis, 1864, pp. 185–222), gives details of 148 instances of its occurrence in that year, and estimates that the invading host which then visited Europe could not well have numbered less than 700 individuals. Previous to 1863 it was scarcely known as a European bird. Möschler (Naumannia, iii. p. 305) first recorded it as being found in Europe, and included it in a list of the birds occurring at Sarepta, on the Lower Volga; and in 1859 several examples were obtained. One was obtained at Walpole St. Peter's, in Norfolk, early in July; a second near Tremadoc, in Wales, on the 9th of that month; a third near Hobro, in Jutland, on the 23rd of July; and a fourth near Landvoort, in Holland. Besides these, Professor Newton (*l. c.*) states that one was obtained at New Romney, in Kent, in November 1859; and in May, in the same year, a pair are stated to have been killed in the Wilna Government, in Russia.

As Professor Newton has gone into such close details in his article above quoted, I need only name the different localities enumerated by him where it was met with in 1863, and refer to his paper for fuller details. The largest number appear to have been recorded from England; in Norfolk and Suffolk alone about seventy specimens were obtained. The localities in England enumerated by Professor Newton are Waxham, Winterton, Kessingland, Horsey, Breydon, Thorpe, Alderton, Sizewell, Sherringham, Morston, Mersea, Dungeness, Lydd, Elmley, Croxton, Elveden, Wangford, Holme, Methwold, Bexhill, Fordham, Pevensey, Eastbourne, Saffron Walden, Saltfleet, Alford, Swaffham Prior, Leake, Cottenham, Oakington, Barrington, Forest

Gate, Louth, Boston, Royston, Balcombe, North Burton, Barnet, Bridlington, Peterborough, Skidby, Flotmanby, Whitby, Aldershot, Farnsfield, York, Teesmouth, Whitburn, Sheffield, Farsley, Cowpen, Thropton, Ryton, Embleton, Ross Links, Belford, Berwick-on-Tweed, Imber, Eccleshall, Kilcot, Warrington, Ludlow, Penrith, Oswestry, Leasowe, Walney, Slapton, Heanton, Haverfordwest, Land's End, St. Agnes. In Ireland it was recorded from Balbriggan, Ross, Drumbeg, and Naran; and in Scotland from Muchalls, Hoylake, Stirling, Dornoch, Renfrewshire; and from Unst, in the Shetland Isles.

It was met with as far north as the Færoes; for one was found dead in the sea late in May, near Thorshavn, two males were killed in June, and two others were obtained at the same time, but not shot; and they remained on the island as late as September. Mr. R. Collett says (Norg. Fugle, p. 44) that "it appeared in flocks in the southern and western portions of Norway in the summer and autumn of 1863, and several specimens were obtained. A flock of fourteen to fifteen individuals was first observed at Mandel about the middle of August, out of which two were shot and sent by Dr. Roscher to the University Museum. Subsequently specimens were shot at Öieren and in Lauerdal; along the west coast five were shot in Lindaas, in Nordhordland, north of Bergen, and two on the Nordfjord, in 62° N. lat." Professor Sundevall says that it also occurred in Sweden in 1863. Two were shot in July at Sandsjö, near Filipstad; and on the 10th November three were seen on the east coast of Southern Öland, one of which was shot by Mr. C. G. Kindberg. According to Reinhardt one was obtained on Gottland; and two more are recorded in the Jäg. Förb. Tidskrift, 1864; and Mr. Wheelwright stated in a letter to the 'Field' that three were shot at Nyköping in May 1863. I do not find any record of its occurrence in Finland. Mr. Sabanäeff informs me that it has been once obtained near Moscow, in 1863, and that there is, according to Mr. Oulianin, a specimen in the Museum at Archangel which was killed near that town. There is also a specimen in the collection of Mr. Heinrichs which was shot in 1863 near Archangel. In North Germany it appears to have occurred in many localities during the irruption of 1863. Professor Newton (*l. c.*) enumerates many instances of its having been met with; and Hintz records (J. f. O. 1864, p. 194) the occurrence of one between Belgard and Coslin. Mr. A. Benzon informs me that the first were met with in Denmark on the 23rd July, 1859, and in 1863 it appeared in flocks, and some bred there. Professor Newton gives (*l. c.*) some interesting extracts respecting the breeding-habits as observed there, which I transcribe below. In Heligoland it appears to have been numerous in May and June; and nearly thirty were shot in the former month, and five in the latter. A large flock was observed in the autumn on Norderney; and flocks of from fifteen to one hundred appeared on the 21st May, on Borkum, where none were seen from the 23rd June to the 1st July, when large flocks returned, and until September examples were observed and obtained there. In Holland and Belgium it appears to have occurred in many localities; and, according to Heer Crommelin, it is said to have bred in the vicinity of Harlem: Professor Newton give the following localities where it has occurred, viz. Groningen, Weert, Rocour, Velzen, Landvoort, Nordwijk, Wassenaar, St. Quentin, Lille, Ostend, Bergues, and Somme. Messrs. Degland and Gerbe say that in 1863 it was generally distributed throughout the basins of the Seine, the Loire, the Gironde, and the Rhône, in the Departments of the Somme and the Aube from June to September, in Vendée in November, and near Metz, on the Moselle, in February 1864. Mr. Howard Saunders informs

me that there is an adult specimen in the Museum of Perpignan obtained in the market of that town on the 18th October, 1859. In Italy the first were obtained in May 1863, near Predazzo, when one out of a flock of ten or twelve was shot by an Austrian officer near Belluno; a second was brought to the market of Treviso; another was taken near Rimini, and one near Carpigiano, in the Modenese. In 1864 one was obtained near Friuli, in January, and one at Novara about the middle of February. In Sicily it has not occurred; for Mr. Howard Saunders writes to me that he was in error in citing it as having been obtained near Syracuse, the mistake having arisen in transcribing his rough notes, in which only the vernacular name had been written, the bird referred to being a male *Pterocles alchata*. According to Dr. Anton Fritsch several were killed in Bohemia, chiefly in the southern portions: the first was obtained at Dobris, and another at one of the gates of Prague. There are several instances on record of its occurrence in Austria. Ritter von Tschusi-Schmidhofen informs me that Pfarrer Jukovits obtained a male in May and a female in June 1863 near the Neusiedler lake, and in January 1864 a third specimen; others were observed in February and March. A watcher killed a female out of a flock of four on the 15th of May, 1863, near Augezd, at Sokolnitz (Moravia): in the ovarium were eggs as large as a pea; and the stomach contained barley and other unknown seeds. In 1864 about twenty were seen near Brody (Galicia), and three shot, which are now in the collection of Count Dzieduszycki. Three were killed at Neumarkt, and one flew against the telegraph-wires and broke its wing.

The above-quoted localities are, so far as I can ascertain, those where the present species has hitherto been met with, chiefly during the curious irruption which took place in 1863, the cause of which is quite unknown, and can only be surmised. As, however, so large a number of individuals appear to have then visited Europe, it may be taken for granted that many were killed of which no record was obtained, and the area over which the present species then spread itself may probably have been more extensive than is above stated.

The true home of Pallas's Sand-Grouse is the large sandy steppes of Asia, where it is met with as far east as China. First described by Pallas from examples sent alive by Rytschkoff from near Dshidel-mamut, in the Kirghis steppes, it was subsequently sent from the great steppes of Gobi; and in 1856 Dr. G. Radde met with it when collecting in South-eastern Siberia, and was the first to publish an account of its nidification and general habits, a translation of which I give below. Severtzoff states that it is resident in North-eastern Turkestan; and Père David says that it breeds in Mongolia and visits the plains of Pekin either during severe winters or when there is much snow in Central Asia; and Mr. Swinhoe writes (Ibis, 1861, p. 341) respecting its occurrence in North China as follows:—"Your readers will be both surprised and delighted to hear of the abundant occurrence of this species during the winter about the plains between Peking and Tientsin. Flocks of hundreds constantly pass over with a very swift flight, not unlike that of the Golden Plover, for which we at first mistook them. The market at Tientsin was literally glutted with them, and you could purchase them for a mere nothing. The natives called them '*Sha-chee*,' or Sand-fowl, and told me they were mostly caught in clap-nets. After a fall of snow their capture was greatest; for where the net was laid the ground was cleared and strewed with small green beans; the cleared patch was almost sure to catch the eyes of the passing flocks, who would descend and crowd into the snare. It only remained then for the fowler, hidden at a distance, to jerk the strings, and in his haul he would not unfrequently take the whole flock.

Numbers, however, were shot with matchlocks. When on the ground they were rather shy and difficult of approach; but on the wing they would sometimes dart within a few yards of you. They possess rather a melodious chuckle, the only note that I have heard them utter. The natives say that, during the summer, they are found abundantly in the great plains of Tartary beyond the Great Wáll, where they breed in the sand." Some most interesting notes respecting the occurrence of the present species in Mongolia and on its habits have been lately published by Colonel Prjevalsky. This gentleman says that the present species is one of the most characteristic birds of Mongolia, inhabiting not only the steppes, but the true desert. In summer it ranges north beyond Lake Baikal, and breeds there; but it winters in the Gobi desert, in places which are bare of snow, and in Alashan, where he constantly met with them from the middle of October, sometimes in flocks of several thousand individuals. These enormous flocks feed principally on the seeds of *Agriophyllum gobicum*; so that the number of those that remain there to winter depends greatly on the crop of these seeds; but they occasionally feed also on other seeds and berries. In the early morning about sunrise they leave their roosting-places and start for the desert in search of food, flying very low, forming a long line. They fly with great swiftness, and make a peculiar sound with their wings, so that one can hear a large flock at a great distance, the noise made somewhat resembling the whistling of the wind. When flying, the male frequently utters a peculiar note, somewhat resembling the syllables *truck-turuck*, *truck-turuck*; but he observed that when packed in large flocks the males do not call, but only when a few individuals are flying together. Occasionally these small flocks rise high into the air, single individuals now and again swooping down to the ground to rise again and rejoin the rest, as Rooks do when on passage. When feeding, the entire flock settles down, and after forming a line the birds run forward slowly and clumsily, taking very short steps and waddling from side to side. The tracks which they make in the sand resemble those of small mammals, and cover the sandy deserts of Alashan. After their morning feed they leave to drink, visiting some small pool or salt lake; but they prefer the fresh to the salt water. At their drinking-places as well as their feeding-places, before they settle down, they describe a circle in the air, so as to be assured that there is no danger. They drink very quickly, and rise again at once; so that when the flocks are large those in front fly up before the birds in the rear have time to alight. They have favourite drinking-places, and will traverse many miles to visit them, especially between nine and ten o'clock in the forenoon; but after noon they seldom visit these places. Mr. Prjevalsky also met with some wintering in the Hoangho valley and throughout South-eastern Mongolia, as also near Kalgan; but when the frost is severe or much snow falls these birds appear in the vicinity of Peking and Tien-tsin, but leave again for South-eastern Mongolia directly mild weather sets in. On the whole these birds wander more in the winter than they do in the summer, probably to obtain warmth. In the spring a portion leave for Northern Mongolia and Lake-Baikal basin, whilst the rest remain to breed at their old winter quarters.

Pallas's Sand-Grouse does not construct any nest, but the eggs are deposited on the sand, sometimes without any hole being scratched in the ground, but at others a few grass-bents are made use of to line the nest. Early in June Mr. Prjevalsky found three nests in Alashan, each of which contained three eggs: one clutch was quite fresh; but the other two were much incubated. The female does not sit closely, but leaves her eggs if any one approaches to within

twenty paces; and when incubating they go to the drinking-places in large flocks, and leave their eggs exposed to the weather during their absence. This species is very cautious and shy, even though it is but little exposed to pursuit by man; and though its plumage assimilates so closely to the ground it frequents, it does not trust to concealment when exposed to danger, but immediately seeks safety in flight long before one can approach within gunshot-range, and seldom alights until it has traversed a considerable distance. *Falco hendersoni* is the only Raptor that persecutes the Sand-Grouse; and even this swift Falcon cannot always capture them. Mr. Prjevalsky further adds that he observed the present species near Kokonor and Zaidam, but never in Kansu or Northern Thibet.

Dr. Radde appears to have been the first to publish correct information respecting the habits and nidification of the present species of Sand-Grouse; and as I know of no full translation of his notes, I make no apology for translating them *in extenso*. This gentleman writes (Reis. im Süd. v. O. Sib. ii. p. 292) as follows:—"The nest is very simple, and resembles those of the other Sand-Grouse; and several pairs usually breed in company. In the saline impregnated soil on the Tarei-nor, usually on the ground, which has been dry for years, a small hole about 5 inches in diameter is scratched out, and the edge is lined with a few salsola shoots and grasses; but the latter are frequently wanting. The eggs are four in number. . . . *Syrrhaptes* does not winter regularly on the north-eastern edge of the elevated Gobi, except in very mild winters, but arrives so early and breeds so soon after severe seasons, that it is a perfect paradox in this respect. Probably after breeding a second time it shifts its habitat, and during the raw winter months straggles to the southern border of the Gobi, in the low spurs of the northern portion of the Himalaya range. On the 10th March, 1856, when at night the thermometer fell to 13° Réaum., and at midday rose to 2°, the first flock of the present species arrived at the Tarei-nor. They flew in close flocks like Plovers. In the spring these flocks are composed of four or six pairs, as the birds have then paired; but in the autumn more than a hundred collect together in one flock. When on the wing they utter a very audible cry, from which their Mongol name (*Njüpterjün*) is derived; and the pairs fly close together. A male, shot on the 17th March (O. S.), had the testes as large as a cedar-nut; and late in March eggs are to be found, for a female shot on the 30th March had an egg ready for exclusion in her ovary. This Sand-Grouse breeds twice, and sometimes three times in the season. On the 20th April I found fully formed young in three eggs in one nest; and the next day I took two fresh eggs. On the 14th May I again found fresh eggs. The young are certainly able to shift for themselves when hatched, and in this respect assimilate to the Gallinæ rather than to the Columbidæ, which latter the present species in so many respects resembles. I first saw the young birds running after their mother on the 30th April. In the morning, especially in the spring, they visit the fresh water to drink regularly at the same hour. In April the time when they arrived was nine o'clock. Single pairs arrived from different directions, calling, and were answered by those which had already arrived, and which they then joined; and they stood on the edge of the water in a line, usually eight to twelve together: but they did not remain there long; for they soon left to feed. They do not despise the young juicy shoots of the *Salicorniæ*, and regularly graze on these as the Bustard does on some of the grasses. In the spring I found the crop and stomach full of the seeds of the *Salsola*. During the summer they are fond of basking in the sun; and I then

generally found several pairs together. Like hens they scratch a hole in the greyish white salty hillocks which cover large tracts on the banks of the Tarei-nor, and on which the salt plants grow. I have often watched them resting in these places; at first they run about as if searching for something; and then at about eleven o'clock, when it becomes hot, they rest, scratching a hole in the ground, and, like barn-door fowls, working themselves in comfortably, the body being inclined sideways, and the plumage, which is otherwise so smooth, being puffed out. They do not place a sentinel, but sit quietly, their plumage assimilating so well with the soil that they can scarcely be distinguished. When disturbed they rise uttering a cry, and fly off like an arrow propelled from a bow; and all that hear the alarm-cry at once take flight also, even if not belonging to the same flock. One then sees them pack together, then divide into small flocks again, and by degrees again take to their resting-places. So swift are they on the wing that it is scarcely possible for the swiftest Falcon to catch them; and their flight is swifter and straighter than that of a Pigeon. I doubt, however, if they can run far, as when I have been watching them they ran swiftly but not for any distance. It is curious how the large flocks migrate away in the summer; I myself had a peculiar instance of this from personal observation. Late in May I went to visit the Aral Island, in the Tarei-nor, and had to pass the large tract where the lake was dried out; and in the forenoon I saw a number of flocks of Sand-Grouse, which inhabited this place and were so shy that I could not possibly approach them. After many unsuccessful attempts to shoot them, I gave up the chance till the evening. At sunset they had collected into two large flocks of at least a thousand individuals each, and were making a great noise; and it was now impossible to approach them. After being several times disturbed they left the shores of the Tarei-nor and went to the neighbouring wintering-place of the flocks, where, from the numerous droppings, there was always a large blackish brown patch on the sterile steppe. Here they remained undisturbed, as the darkness prevented me from following them; but they continued calling loudly. On the next day not one was to be seen; and later on I did not see one. The herdsmen also assured me that there were no Sand-Grouse left, but that they would return in the autumn; and such proved to be the case. In October, when hunting *Equus hemionus* and *Antilope gutturosa* north of the Dalai-nor, a large noisy flock passed me, travelling from the south to the north. Here on the north-east of the Gobi, if they remain in the autumn, the natives calculate on a mild winter. From the foregoing one can see that the name *paradoxus* is a very suitable one for this bird. . . . . The flesh of this Sand-Grouse is white and very good. In the interior of Mongolia it is said to be so common that the Cossack guard that convoys the missionaries to Pekin live chiefly on these birds during the journey."

Four eggs of the present species taken by Dr. G. Radde, now in my collection, do not vary much, *inter se*. They are stone-buff or ochreous-buff in colour, marked with pale purplish brown shell-blotches and dark brown surface-spots, which are somewhat sparingly scattered over the surface of the shell; in one some of the markings are contorted in hieroglyphic shape. In size they vary from $1\frac{27}{40}$ by $1\frac{5}{40}$ to $1\frac{28}{40}$ by $1\frac{8}{40}$ inch.

As above stated, the present species nested in Denmark during the irruption which took place in 1863; and some interesting details were published by Professor Reinhardt, and by him communicated to Professor Newton (Ibis, 1864, p. 195). From these I extract the following, viz.:—

"Early in June last (1863), Herr Bulow, an officer in the Custom-House at Ringkjobing, sent the

Professor several living birds which had been snared by a gunner *on their nests* in the above-mentioned district, together with four of their eggs. One of the latter was found by Herr Bulow in the box which conveyed the birds, having been laid on the journey. It was colourless, indicating that it had been prematurely produced. The other three eggs were fully coloured. It appears that this gunner found two nests of the *Syrrhaptes* in his own neighbourhood, and a third at a place called Bierregaard. On two of the nests both the birds (in each case the hens first and then the cocks) were caught, on the 6th June. These nests were near one another; and one, containing three eggs, consisted of a slight depression in the sand, lined with a little dry marram. The other had only two eggs, was placed among some ling, and furnished in a like manner. The third nest was similar to the first, and was halfway up a sandhill. Of the three eggs sent to Herr Bulow, he found that two were quite fresh, but in the third the fœtus had begun to form, showing that they had been taken from different nests. Some more nests were found by other people, but unfortunately none of them were taken care of. The gunner, at Herr Bulow's request, made further search, but not until the 27th of July did he succeed in making any new discoveries. On that day he met with a flock of about a dozen birds, of which he shot two. He then went again to Bierregaard, where at last he put a bird off its nest among some stones in the sand, and containing three eggs. Next day he returned to it, and set a snare, in which, after two or three hours, the hen bird was caught; and a few hours later, having reset the snare, he procured the cock in the same way. In the interval he found, to his surprise, that one of the eggs had been hatched. He took away with him the pair of old birds, the newly born chick, and the remaining two eggs, which, on getting home, he put in a box of wool by the fire, where a second egg was hatched. The third proved to be rotten. The chicks only lived one day; and it seems they were not preserved. On that same day (the 28th), while waiting about for these birds to be caught, he stumbled on another nest, from which he shot both owners."

The specimens figured are a male from the collection of Mr. R. Swinhoe, in the foreground, and a female from my own collection in the background.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀. Near Cologne, 1863.

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. Turkestan (*Severtzoff*).

*E Mus. R. Swinhoe.*

*a*, ♂ *ad.*, *b*, ♂ *juv.* Tien-tsin, China, December 1860 (*R. S.*).

## Order II. GALLINÆ.

### Family PHASIANIDÆ.

Genus PHASIANUS.

*Phasianus*, Brisson, Orn. i. p. 262.

The Pheasants inhabit the Palæarctic Region, one species only being found in the Western Palæarctic Region; but of late years so many other species of Pheasants have been introduced into preserves and crossed with the common Pheasant, that it is difficult to obtain pure-bred birds, except in the extreme south-eastern portion of the Region. They frequent groves and woods, especially where there are cultivated fields in the immediate vicinity, and feed on seeds, fruits, insects, &c., obtaining their food to a large extent by scratching, like the domestic fowls. They fly well, though not very swiftly, and when rising they do so rather noisily. They roost on trees, frequently at a considerable height above the ground; and the cock birds usually utter their loud crowing note when they fly up to their roosting-place. They walk with ease, and often traverse considerable distances on foot when wandering about in search of food. They are polygamous; and fierce combats often take place between the males for the possession of the females. The nest is a depression in the soil, in some well-sheltered place, lined with grass, leaves, roots, &c.; and the eggs, which are numerous, are pale olivaceous brown in colour. The young birds when hatched are covered with close short down, and are able to run about almost immediately.

*Phasianus colchicus*, the type of the genus, has the bill strong, short, deeper than broad at the base, depressed at the end; nostrils linear, oblong, slightly recurved, placed in the lower and fore part of the nasal membrane, which is thick, vaulted, and smooth; eyelids and a large space round the eye, extending to the bill, bare and covered with small cutaneous papillæ, with a few plumules here and there; wings short, broad, rounded, the first quill about equal to the eighth, the fourth and fifth longest, the secondaries nearly as long as the primaries; tail very long, much graduated, composed of eighteen feathers; legs strong, the tarsus moderately long, stout, scutellate, furnished behind with a short, conical, straight spur; hind toe small; anterior toes strong, united at the base by thick webs; claws moderate, arched, flat beneath, moderately sharp; œsophagus (as is the case with all the gallinaceous birds) enlarged into a crop of considerable size, which lies over the fore part of the neck and thorax.



E Neale del

J. Nugent Fitch lith

PHEASANT.

PHASIANUS COLCHICUS.

# PHASIANUS COLCHICUS.

(PHEASANT.)

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*Phasianus*, Briss. Orn. i. p. 262 (1760).
*Phasianus varius*, Briss. tom. cit. p. 267, pl. xxv. fig. 3 (1760).
*Phasianus colchicus*, Linn. Syst. Nat. i. p. 271 (1766).
*Le Faisan*, Buff. Hist. Nat. Ois. ii. p. 328 (1771).
*Phasianus marginatus*, Wolf, Taschenb. deutsch. Vogelk. i. p. 291 (1810).

*Faisan*, French; *Fagiano*, Italian; *Edelfasan*, German.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 121, 122; Frisch, Vög. Deutschl. taf. 123, 124; Naumann, Vög. Deutschl. taf. 162; Sundevall, Svensk. Fogl. pl. 74. fig. 2; Gould, B. of Eur. pl. 247; id. B. of G. Brit. iv. pl. 12; Bettoni, Ucc. Lomb. pl. 57; Elliot, Monogr. Phas. ii. pl. 2.

♂ *ad.* pileo viridi-nigro: collo superiore nigro, purpureo violaceo nitente, collo imo et dorsi plumis aurantiacis nigro marginatis et notatis, scapularibus et plumis in dorso imo magis æneo-rufescentibus et cervino notatis: remigibus fuscis ochraceo transfasciatis: tectricibus alarum olivaceo-aurantiacis æneo-purpureo et ochraceo variegatis; uropygio et supracaudalibus rufescentibus purpureo tinctis: caudâ olivaceo-aurantiacâ nigro transfasciatâ, rectricibus centralibus rufescente æneo marginatis: pectore et hypochondriis aurantiacis nigro marginatis: abdomine centraliter cæruleo-nigro: rostro corneo-albo, parte nudâ in faciei lateribus coccineâ: pedibus fuscis: iride saturatè fuscâ.

♀ *ad.* corpore suprà cum capite et collo ochraceo-cervinis, nigro et nigro-fusco notatis et fasciatis: collo et pectore vix vinaceo tinctis: corpore subtùs ochraceo-cervino, nigricanti vermiculato et sparsè eodem colore notato: rectricibus centraliter nigro-fuscis, ochraceo et fulvido variegatis, et lateraliter ochraceis nigricanti vermiculatis: capitis lateribus haud nudis.

*Adult Male* (Ismidt, 20th January). Crown and nape black, richly glossed with bottle-green; sides of the head, except the bare portion, chin, and upper throat and neck blackish, richly glossed with violet-purple; feathers on the lower neck, breast, and fore part of the back black on the basal portion, then rufescent golden, margined with black, many having an apical black spot; on the scapulars and rest of the back the golden hue deepens into coppery purple, and most of the feathers have a central horse-shoe-shaped buff mark; quills dark brown, slightly barred with ochreous buff; wing-coverts golden olivaceous, varied with coppery purple and ochreous; rump and upper tail-coverts rich fiery reddish, glossed with purple; tail golden-olivaceous with central bars of black, the central feathers margined with fiery purple; flanks like the breast, but more golden-orange in tinge; centre of the abdomen black with a bluish tinge; bill pale whitish horn; wattles on the sides of the head rich vermilion-red or blood-red; legs dull brown; iris deep brown. Total length about 33 inches, culmen 1·2, wing 9·3, tail 18·2, central rectrices 13·5, longer than the outside ones, tarsus 2·7.

*Adult Female* (Ismidt). Upper parts generally black, the feathers broadly margined with clay-buff, the neck washed with warm vinaceous; underparts clay-buff, vermiculated with blackish, the black bases of the

feathers showing through here and there, especially on the flanks and neck, which latter with the upper breast is faintly washed with vinous; chin clay-yellow; quills and wing-coverts dark brown, richly variegated with clay-buff; centre of tail-feathers blackish, variegated with ochreous and dull rufescent, the rest of the feathers being dull clay-ochreous vermiculated with blackish; sides of head feathered, and not bare; bill browner than in the male; legs dull brown; iris deep brown.

*Young.* In their first-feather plumage the young of both sexes resemble the female; but the young male assumes the plumage of the old male in the autumnal moult, but at first the coloration of his plumage is duller, and his tail is shorter than in the fully adult bird.

*Young in down.* Sides of the head, throat, and underparts yellowish white; forehead dull rusty yellowish with a dark brown central stripe, which broadens towards the nape; behind the ear is a black spot; upper parts generally yellowish, variegated with rusty red and brown, and with blackish brown stripes; bill reddish white, brownish above; legs yellowish white; iris greyish.

When the young bird is eight or ten days old the quills commence to shoot out; and the bird is soon able to flutter along.

The present species is now tolerably widely distributed in temperate Europe, but almost everywhere in a nearly semidomesticated state, except in the south-eastern countries, where it is in a really wild condition; and there alone the true species, without admixture of other blood, is to be found. It is, however, a species which has been introduced by the agency of man; and the generally accepted tradition is that the Argonauts when returning from Colchis with the golden fleece brought with them to Greece some live Pheasants, by which Greece was stocked with these birds. This species has long been thoroughly acclimatized in Great Britain, having been, so far as one can judge, introduced by the Romans; yet this is merely a conjecture, as there is no direct evidence to show how and when it first came to our shores—though it was certainly naturalized here prior to the Norman conquest; for Mr. Boyd Dawkins writes (Ibis, 1869, p. 358):—"It may interest your readers to know that the most ancient record of the occurrence of the Pheasant in Great Britain is to be found in the tract 'De inventione Sanctæ Crucis nostræ in Monte Acuto et de ductione ejusdem apud Waltham,' edited from manuscripts in the British Museum by Professor Stubbs, and published in 1861. The bill of fare drawn up by Harold for the Canons' households of from six to seven persons, A.D. 1059, and preserved in a manuscript of the date of *circa* 1177, was as follows (p. 16):—

"'Erant autem tales pitantæ unicuique canonico: a festo Sancti Michaelis usque ad caput jejunii (Ash Wednesday) aut xii merulæ, aut ii agauseæ [*Agace*, a Magpie (?) *Ducange*] aut ii perdices, aut unus phasianus, reliquis temporibus aut ancæ [Geese; *Ducange*] aut gallinæ.'

"Now the point of this passage is that it shows that *Phasianus colchicus* had become naturalized in England before the Norman invasion; and as the English and Danes were not the introducers of strange animals in any well-authenticated case, it offers fair presumptive evidence that it was introduced by the Roman conquerors, who naturalized the Fallow Deer in Britain.

"The eating of Magpies at Waltham, though singular, was not so remarkable as the eating of horse by the monks of St. Galle in the time of Charles the Great, and the returning of thanks to God for it:—

"'Sit feralis equi caro dulcis sub cruce Christi!' The bird was not so unclean as the horse —the emblem of Paganism—was unholy."

In the reign of Edward I. Pheasants were sold at eight pence per brace; and I may remark that, according to Mr. Robert Gray, the first mention made of the Pheasant in old Scots Acts is in one dated 8th June 1594, in which, amongst other birds and beasts, the Pheasant is scheduled as a protected species.

In Great Britain the Pheasant is found in most large preserves, from the extreme south up to Sutherland and the Outer Hebrides. Mr. Robert Gray says (B. of W. of Scotl. p. 224) that it is commonly distributed throughout the western counties, extending from Sutherland to the shores of Wigtown. In the neighbourhood of Loch Lomond it is occasionally seen on the mountain-sides as high as 1200 feet. It was introduced into Lewis, in the Outer Hebrides, by Sir James Matheson, and has become fairly established there. Other species have also been introduced into Scotland, as for instance *Phasianus versicolor* and *Phasianus reevesii*; and both these have crossed with the present species, so that it is, as elsewhere, most difficult to find a pure-blooded *Phasianus colchicus*.

In Ireland, according to Thompson, the Pheasant "is common in various wooded parts of the island, where it has been preserved and protected. This species being neither an indigenous one, nor a visitant to Ireland in a wild state, but having certainly been introduced, is therefore disentitled to receive the honours of ordinary type. The period of its introduction is unknown to me; but in the year 1589 it was remarked to be common. Fynes Moeyson, who was in Ireland from 1599 till 1603, observes that there are 'such plenty of Pheasants as I have known sixty served up at one feast, and abound much more with Rails, but Partridges are somewhat scarce.'—Vol. ii. p. 368. Smith seems to have imagined that Pheasants were indigenous to the island, as in his 'History of Cork' it is remarked, 'they are now (1749) indeed very rare, most of our woods being cut down.'"

In Sweden and Norway the Pheasant is only found domesticated; and it is known in Southern Russia only, and not in Northern Russia or Poland. In North Germany it has become wild in some few localities, but otherwise it is only met with in preserves; and, according to Mr. Collin, it is kept in a state of semidomestication at Kongelunden, on Amager, in Denmark. Naumann says that it is now quite wild in several parts of Bohemia, on the Danube, the Rhine, and in the lowlands of the Elbe, but that north of Central Germany it is found nowhere, unless preserved. Dr. Rey informs me that it occurs here and there in an almost wild state in Saxony. According to Baron Fallon it is acclimatized here and there in Belgium; Mr. Labouchere informs me that it thrives well in the drier portions of Holland; and in France it is found in many preserves. I do not find it recorded from Portugal or Spain; and in Italy, Salvadori says, it is only to be met with in a semidomesticated state, and never really wild; and Mr. Jesse remarks that a few are found on the east coast of Corsica. It is, however, wild in Greece; but Dr. Krüper mentions that it is now nearly extinct in the swamps of Acarnania, but is tolerably numerous in Olympus, and is shot there annually.

In winter it is not uncommon in Macedonia, but only in the plains. Lord Lilford writes (Ibis, 1860, p. 237):—"The only localities in which I have myself seen Pheasants in these parts were:—once on the Luro river, near Prevesa, in March 1857, on which occasion I only saw one, the bird having never previously been met with in that part of the country; and again in

December of the same year, in the forests near the mouth of the river Drin, in Albania, where it is comparatively common, and where several fell to our guns. In this latter locality the Pheasant's habitat seems to be confined to a radius of from twenty to thirty miles to the north, east, and south of the town of Alessio—a district for the most part densely wooded, and well watered, with occasional tracts of cultivated ground, Indian corn being apparently the principal produce, and forming, with the berries of the privet (which abounds throughout Albania), the chief food of the present species. We heard many more Pheasants than we saw, as the woods were thick and of great extent, our dogs wild, and we lost a great deal of time in making circuits to cross or avoid the numerous small but deep streams which intersect the country in every direction. This species is particularly abundant on the shores of the Gulf of Salonica, about the mouth of the river Vardar; and I have been informed, on good authority, that Pheasants are also to be found in the woods of Vhrakori, in Ætolia, about midway between the Gulfs of Lepanto and Arta."

As above stated, it is tolerably numerous in Southern Germany; but Dr. Fritsch says that it is not so common as it used to be, for in 1857 the total number shot in Bohemia was 50609, whereas in 1864 it had dwindled to 39296. Messrs. Danford and Harvie-Brown say (Ibis, 1875, p. 418) that it used formerly to be rather common in the preserves of some of the nobles of Transylvania, but during the revolution of 1848 most were destroyed, and they are not certain that it now exists there at all. According to Messrs. Elwes and Buckley (Ibis, 1870, p. 329), the Pheasant "exists in a wild state in many parts of Turkey, especially in Macedonia and the north of Albania. We found Pheasants chiefly in the marshy forests of the plains; but, owing to the extreme density of the brambles, they were very difficult to flush, and, when put up by the dogs, would sometimes fly into a tree. A good many are found in the coverts round the foot of Mount Olympus and the vale of Tempe; but they are becoming scarcer. There cannot be many in Roumelia; for when they were required for the Sultan's aviaries, he sent to Salonica to have them caught."

In Southern Russia, Mr. Artzibascheff says, the Pheasant is occasionally seen on the Sarpa, but he himself never met with it; and Professor Von Nordmann states that though it is not found in a wild state in New Russia, it occurs along the eastern side of the Black Sea, and thence eastwards down to the Caucasus. Mr. G. C. Taylor, however, says that he never saw it wild in the Crimea. Asia Minor is the true home of the Pheasant; and Mr. Pearse informs me that large numbers are sent to the Constantinople market from Asiatic Turkey. It appears, however, to be locally distributed there; for Mr. Danford does not include it in his list, and Canon Tristram remarks (Ibis, 1868, p. 212) that though he observed it wild near Ephesus, it does not appear to be known in Syria. Ménétriés says that it is common in the Caucasus, near the Terek and Soulak rivers, and even in the mountains of Bechtan, near the mineral waters of Petigorsk; and according to Mr. Blanford it abounds in the forests of the Caspian, and ranges through the forest-region of Mazandarán as far east as the upper valley of the Gurgán. Travellers have recorded it from the jungles of the Harirud valley, but do not appear to have seen it. In other portions of Asia the present bird is replaced by many allied species, for particulars respecting which I may refer my readers to Mr. Elliot's magnificent work, 'Monograph of the Phasianidæ,' in which are plates of almost all the known species, executed by Wolf.

The Pheasant, one of our best-known and most highly valued game-birds, is essentially an

inhabitant of the woodlands, though not of the true forest; for it affects groves where there are small patches covered with low bushes and tangled herbage here and there, hazel coppices, and non-evergreen patches of woodland where it is not too dry, and also swampy localities in the woods; but one seldom sees them on bleak open hill-sides or in the pine-forests, unless, as Naumann remarks, to seek shelter from severe weather. Places where there are cornfields near are especially suitable to this species; for it thrives exceedingly well where it can find an abundance of food near its woodland haunts. It is, as a rule, found on the ground, where it wanders about in search of food, usually in places where the undergrowth is tolerably close; but in the heat of the day it is fond of sunning and dusting itself, like our domestic fowl. It scratches a good deal where the soil is suitable, and picks the insects and seeds out of the ground as it turns them up. When undisturbed it steps sedately and quietly along, the long tail being held almost horizontal or slightly elevated, the head rather erect, and the ear-tufts invisible; but directly its suspicions are excited, and it apprehends danger, these tufts are at once erected, and are very easily discernible even at some distance. When it takes alarm it stretches its neck, erects its tail somewhat, and usually runs for a short distance before taking wing, dropping again into the cover after it has flown a short distance, and seldom flying far.

In the spring of the year the cock Pheasant's pairing-note or crow may frequently be heard, usually in the early morning, when he flies down from his roost and calls the females round him. This crow or call somewhat resembles the feeble attempts of a domestic cock, and is followed, not preceded, by a clapping of the wings.

The Pheasant is polygamous; and in the spring of the year desperate combats often take place for the possession of the females, for the cock Pheasant is extremely pugnacious. When making advances towards the females this bird, like the common cock, depresses and opens its wing nearest to the hen bird, the tail being expanded and thrown sideways, the ear-tufts being greatly erected, and the bright-red skin round the eye being swollen and much more extended than at other seasons of the year.

The usual note of the Pheasant is a tolerably loud call, like the words *cock-cock-cock*, which is almost always uttered when the bird suddenly flies up into a tree, and when it takes up its quarters for the night; and on a quiet evening one can, without any great difficulty, count the number of cocks in a small plantation, and even ascertain the trees on which they roost.

The food of the Pheasant varies greatly according to the season of the year. In the winter it feeds chiefly on grain and seeds of various kinds, insects of almost all sorts being added to its bill of fare as soon as the spring opens; in the summer it devours insects, the tender shoots of plants, &c. &c., fruits of various kinds as they ripen; and in the autumn it feeds on ripe seeds, berries, &c. &c. Amongst the vegetable substances it feeds on I may enumerate grain of various kinds, wheat, buckwheat, lentils, oats, barley, rape-seed, peas, linseed, the seeds of many sorts of grasses &c. (such as *Panicum*, *Polygonum aviculare*, *P. dumetorum*, *P. convolvulus*, various species of *Melampyrum*), acorns, beech-mast, the seeds of the hemp nettle (*Galeopsis*), the tender shoots of grasses, clover, cabbages, pimpernel, young peas, the roots of the common silver weed (*Potentilla anserina*), the tubers of the common buttercup and pilewort (*Ranunculus bulbosus* and *Ranunculus ficaria*), the yellow flowers of the latter plant, berries of many kinds, such as the hawthorn (*Cratægus*), mulberries, currants, brambles, red and black elderberries, mistletoe-

berries. Fruits it will eat readily, such as wild strawberries, plums, apples, pears, raspberries; and amongst the insects it devours are may-bugs, grasshoppers, beetles of various kinds, spiders, flies, larvæ of different sorts, the small excrescences on the underside of the leaves of the oak, so-called spangles, wire worms (of which as many as twelve hundred have been found in the crop of a hen Pheasant); and this bird has been known to eat a slowworm.

As above stated, the Pheasant is polygamous, an old and strong cock having a harem of from six to nine females, though at first he will sometimes commence by keeping company with one hen, from which circumstance the older naturalists have in error concluded that it lives, as a rule, in monogamy. When the female wants to lay she withdraws to some quiet place, where, in the dense grass-growth of a thicket, in an old hedgerow, or in a field near a covert, she scratches a depression in the soil, which is lined with dried grasses, roots, and leaves, and in this deposits from eight to twelve eggs. Occasionally two females will have one nest in common; and an instance is cited by Mr. Tegetmeier of a Pheasant and a Partridge having such a nest, the eggs of the two species being laid indiscriminately together; and both birds were found sitting side by side in perfect amity. Occasionally, though very rarely, the hen Pheasant will lay in the deserted nest of an Owl or a Squirrel; but, as a rule, it is a ground-breeder. When the young are hatched they are very carefully tended by the old bird, and fed chiefly on insects, the larvæ of ants, so-called ants' eggs being a particularly favourite article of food, the old female placing them before the young ones and encouraging them to pick them up like a domestic hen. When first hatched they are very tender, and require great care on the part of the mother, who collects them and covers them during bad weather and at night; but when about half-grown they are able to fly up and roost on a branch with the old bird.

The present species, as above stated, not only breeds freely with other allied Pheasants, but it has been known also to cross with the domestic Fowl, the Guineafowl, the Black Grouse; and, according to Edwards, it has paired with the Turkey. The birds which are known amongst sportsmen by the name of Mule Pheasants, however, are not hybrids but barren hen birds, either very old birds or else those suffering from a disease or derangement of the generative organs, which have to a larger or less extent assumed the dress of the male bird. I possess two, and have examined several more, of these barren hens, all of which differed a good deal in beauty of plumage, one being almost as richly coloured and marked as the adult male.

The eggs of the Pheasant are uniform pale olivaceons brown in colour, and average about $1\frac{32}{40}$ by $1\frac{16}{40}$ inch.

The specimens figured are an adult pair obtained especially for me in Asia Minor by Mr. Pearse of Constantinople; for, after considerable trouble, I found that I could not get a specimen here in England without some admixture of one of the allied species. The specimen nearest to the really wild bird is one I received from Captain Elwes, which differs only in having the markings rather broader and bolder, especially on the upper parts.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Near Ismid, Asia Minor, January 20th, 1878 (*C. Pearse*). *c*, ♂ *ad.* Colesbourne Park, November 20th, 1870 (*H. J. Elwes*). *d*, ♀ *steril.* Leadenhall Market, October 1875. *e*, ♀ *steril.* Middleton Hall, Tamworth (*Hanbury-Barclay*).

## Genus CACCABIS.

*Perdix* apud Brisson, Orn. i. p. 236 (1760).
*Tetrao* apud Linnæus, Syst. Nat. i. p. 276 (1766).
*Caccabis*, Kaup, Natürl. Syst. p. 183 (1829).
*Alectoris* apud Kaup, op. cit. p. 180 (1829).
*Chacura* apud Hodgson, Madr. Journ. 1837, p. 505.
*Pyctes* apud Hodgson in Gray's Zool. Misc. p. 85 (1844).

The Red-legged Partridges inhabit the Palæarctic, Ethiopian, and Oriental Regions, four species inhabiting the Western Palæarctic Region. They resemble the common Partridge in habits more than any of their allies, frequenting cultivated ground, fields, &c.; but some species are more frequently found in rugged mountainous localities, especially where there is close low scrub. They are very swift on foot; and when disturbed they prefer to run, or even to squat, in preference to taking wing. They fly, however, extremely fast when once on the wing, and will frequently traverse considerable distances. They have also a peculiar habit of flying up into a tree; and a covey may occasionally be seen sitting in a row on a fence or the roof of a barn. They feed on grain, seeds, fruit, and insects of various kinds, and often obtain their food by scratching. They are also partial to dusting themselves in sandy soil, and to basking in the sun.

They nest on the ground, making a depression in the soil in some well-concealed place, which they line with grasses, leaves, and sometimes with feathers, and deposit numerous buff-coloured eggs slightly marked with pale red.

*Caccabis rufa*, the type of the genus, has the bill short, stout, straight to the nostrils, then decurved to the point, which is rounded and thin-edged; nostrils basal, lateral, covered above with an exposed oblong horny operculum, the nasal groove broad and feathered; eyelids and a very small space behind the eye bare; wings moderately long, broad, the first quill shorter than the fifth, the third longest; tail moderately short, rounded; legs moderate; tarsus anteriorly scutellate and without any spur behind; anterior toes long, united at the base, the outer and inner ones about equal in length; hind toe small; claws moderately long, slightly curved, moderately sharp.



GREEK PARTRIDGE.

CACCABIS SAXATILIS

# CACCABIS SAXATILIS.

(GREEK PARTRIDGE.)

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*Perdix græca*, Briss. Orn. i. p. 241 (1760, partim).
*Tetrao rufus*, Scop. Ann. I. Hist. Nat. p. 120 (1769, nec Linn.).
*Le Bartavelle ou Perdrix grecque*, Buff. Hist. Nat. Ois. ii. p. 420 (1771).
*Perdix saxatilis*, Meyer, Vög. Deutschl. part viii. (1805).
*Caccabis*, Kaup (*Perdix saxatilis*, Meyer), Natürl. Syst. p. 183 (1829).
*Perdix rupestris*, C. L. Brehm, Vög. Deutschl. p. 522 (1831).
*Chacura græca*, G. R. Gray, List of Gen. of B. p. 79 (1841).
*Caccabis græca*, G. R. Gray, Gen. of Birds, iii. p. 508 (1849).
?*Caccabis saxatilis* (Meyer), W. H. Simpson, Ibis, 1860, p. 388.

*Bartavelle*, French; *Steinhuhn*, *Berghuhn*, German; *Cotornice*, Italian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 231; Gould, B. of Eur. pl. 261. fig. 2; Naumann, Vög. Deutschl. taf. 164; Frisch, Vög. Deutschl. taf. 116.

♂ *ad.* fronte, plumis circum basin rostri et striâ magnâ per oculos ductâ et in gulâ imâ confluente nigris: pileo cano, in parte frontali et lateraliter fere albo: nuchâ canâ vix cervino tinctâ: corpore suprà cærulescenti-cano, dorso vinaceo lavato: remigibus saturatè fuscis, primariis in pogonio externo versus apicem fere omnino ochraceis, secundariis extùs albicante ochraceo marginatis, secundariis intimis dorso concoloribus sed brunneo vix lavatis: tectricibus alarum minoribus vinaceo marginatis: rectricibus centralibus cærulescenti-canis, reliquis ferrugineis, ad basin cærulescenti-canis: mento et gulâ albis: pectore cærulescenti-cano, plumis vix cervino marginatis: abdomine et subcaudalibus ochraceis: hypochondriis cæruleo, nigro et albo variis et castaneo apicatis: rostro et pedibus rubris: iride fuscâ.

♀ *ad.* mari similis sed minor et paullo sordidior.

*Adult Male* (Naples, 15th February). Forehead, feathers at the base of the bill all round, and a broad stripe passing through and behind the eye, down the sides of the neck, where it broadens and meets in front, black; crown blue-grey, or dove-blue, nearly pure white round the margin, where it meets the black, and on the nape tinged with vinous buff; upper parts dove-blue, on the back washed with warm vinous, the lesser wing-coverts margined with this latter colour; quills dark brown, the outer web of the primaries towards the tip almost entirely warm ochre, secondaries margined externally with yellowish white; the inner secondaries and scapulars coloured like the rest of the upper parts, but washed with buffy brown; central rectrices dove-blue, the remainder deep fox-red, and blue only on the basal portion, which is covered by the tail-coverts; chin and throat inside the black band white; breast dove-blue, the feathers slightly edged with pale buff; abdomen and under tail-coverts warm ochre-yellow; feathers on the flanks dove-blue, then crossed by a black band, then white, and terminated by a black band slightly tipped with chestnut-red; legs, bill, and edge of the eyelid coral-red; iris dark brown. Total length about 14 inches, culmen 0·85, wing 6·4, tail 3·9, tarsus 1·7.

*Adult Female* (Naples, 15th February). Closely resembles the male above described, but is a trifle smaller, and lacks the knob on the hind part of the tarsus.

*Young* (Switzerland). Resembles the adult, but is duller, the collar is much narrower, the upper parts are much darker and browner, and there are traces of bars on the tail; the feathers on the flanks are also much less richly coloured.

*Young in down* (Barcelonette). Crown and nape reddish, marked with dark brown; an indistinct dark patch behind the eye; upper parts blackish brown, variegated with reddish brown and white; sides of the head, throat, and underparts white, tinged with buff on the abdomen.

*Obs.* So far as I can gather, *Perdix labatiei* of Bouteille (Orn. du Dauphiné, ii. Add. p. 337, 1844) is nothing but a hybrid between the Greek Partridge and the common Redleg, a view which is taken by Messrs. Degland and Gerbe, and several other authors.

It is somewhat difficult to determine the precise limits of the range of this Partridge, because in Eastern Europe it is replaced by a closely allied though distinct species, *Caccabis chukar*, which latter is the common Red-legged Partridge of Asia Minor. The present species appears to inhabit only the elevated mountain-ranges of Southern Europe. It is stated by Messrs. Degland and Gerbe to inhabit the Pyrenees; but it is not included by Colonel Irby as occurring in Spain, and Lord Lilford writes (Ibis, 1866, p. 348) that he could not hear of it in any part of that country; it is well possible, however, that it may occur in some of the mountain districts of Spain. Baron J. W. von Müller states that it is found in Provence, but is much rarer than the common Redleg. In Switzerland it is common; but Bailly writes that though formerly so numerous in Savoy, it has become rather rare than otherwise. Messrs. Meisner and Schinz say (Vög. der Schweiz, p. 162) that it is a true alpine bird, inhabiting the entire range of the Swiss Alps in the more elevated regions, and never visits the subalpine regions, and is, they add, unknown in the Jura; but Bailly states that it inhabits both the Jura and the Basses-Alpes. In Italy it is found in the Italian Alps, in the Apennines, and in the mountains of Sicily; in fact, as Count Salvadori states, it inhabits the entire mountainous regions of Italy, but it is wanting in Sardinia and Malta. Mr. H. Benvenuti also states (Ibis, 1864, p. 228) that it occurs in Tuscany. It likewise inhabits the Tyrol, where it is said to be not uncommon in some localities, and is also found in the Styrian Alps. Seidensacher says that it inhabits the Bacher, near Rakovic, near Weitenstein, but is rare; and the Ritter von Tschusi-Schmidhofen writes to me respecting its range as follows:—"In the more elevated mountain-ranges of Upper Austria and Salzburg it is nowhere common. Hanf states that it is numerous in Upper Styria, on the Grewenze and other Alps of Styria. In Southern Tyrol, according to Althammer, it breeds commonly, but is less numerous in Northern Tyrol. Bruhin says that it breeds in the Vorarlberg; Von Hueber states that it also inhabits Carinthia (Kärnthen); and Freyer records it from Krain. Fritsch met with it not uncommonly near Fiume, even in the lowlands; and, according to Stetter, it is found near Trieste." Count Casimir Wodzicki met with it in the Tatra Mountains, Carpathian range, and adds that, according to Professor Zawadzki, it is a well-known bird throughout the Mountains of Bukowina.

From the Austrian dominions it becomes difficult to trace the range of the present species;

but, so far as I can ascertain, it appears to inhabit only the mainland of Greece, the Redleg of the islands being *Caccabis chukar*—unless the bird which inhabits the Ionian Islands, of which I have not been able to examine a specimen, is, as suggested to me by Lord Lilford, the present species. Canon Tristram possesses an example of *C. saxatilis* from the mainland of Greece; and I am indebted to Lord Lilford for the loan of his specimens from Cyprus, which are all referable to the eastern species. As a rule the coloration of the throat has been held to be a distinctive character: but this cannot be depended on; for I find that the specimens of *C. chukar* brought from Cyprus by Lord Lilford are, with one exception, nearly as white-throated as examples from Italy, but they have the feathers at the base of the bill in front of the eye white, and are undoubtedly referable to the eastern species. There is no doubt that the Red-legged Partridge which is found near Constantinople is not the present species, but *Caccabis chukar*; so that this latter bird certainly occurs in Europe proper.

In its habits the present species differs considerably from its allies; and, as its German name of *Steinhuhn* or Rock-chick clearly indicates, it affects the stony serrated portions of the mountains in preference to the fruitful valleys and lowlands inhabited by the common Redleg and Barbary Partridge. Bailly says (Orn. de la Sav. iii. p. 469) that it "is found in arid rocky elevated localities, especially those which are difficult of access, and only descends to the plains or to the lower portions of the mountains during the time when its home is covered with snow, or when driven down by severe cold, and is very rarely seen away from the higher portions of the mountains during the breeding-season. When driven from its home by birds of prey or by sportsmen it will descend, but after the lapse of a few hours will pass from height to height until it reaches the most elevated localities.

"They pair in the month of March, and are extremely passionate and amorous. The males challenge each other with loud cries, and will fight with the greatest fury for the possession of a female, who becomes the prize of the conqueror. Quarrelsome and jealous to a degree, they will sometimes fight with such perseverance and so blindly that they lose sight of all caution, and may be shot down with ease. The call-note of the male resembles the syllables *Kakabi kakabet* uttered several times in quick succession; and it is varied by a note like the words *cok*, *cok*, *cokrro*, likewise repeated. By imitating their call-note or that of the female they may not only be easily approached within range, but frequently come to the gunner who is in ambush calling them."

Its flight is heavier and effected with more noise than that of the common Partridge; and it seldom flies long distances, but soon drops on to the ground and seeks safety on foot, running with great swiftness, and concealing itself amongst the stones or herbage. Naumann says that in Switzerland the present species is said occasionally to seek safety by concealing itself amongst the dense foliage of the fir trees.

As a rule it is a very tame and unsuspicious bird, easy to catch or shoot, and equally easy to tame; but, as above stated, it is quarrelsome to a degree during the breeding-season.

Its food consists of seeds of various kinds, tender shoots of herbs, and birds, and during the summer to a large extent of insects of all kinds, coleoptera, grasshoppers, flies, ants, and ant-larvæ, as well as the larvæ of many other kinds of insects. Should grain of any kind be planted in the vicinity of the locality they inhabit, they pay frequent visits to the fields and take their

share of the crop. Naumann says that during the more inclement portion of the year, when other food is scarce, they will feed on the buds of the alpine rose (*Rhododendron*), as well as those of the fir, pine, and larch, and berries of the juniper. The young birds when newly hatched are fed chiefly on ants and their larvæ. Like the common Partridge, the present species is fond of dusting itself, and will lie in the sunshine for long with evident pleasure. When paired the present species lives in strict monogamy; but, as above stated, the males fight viciously for the possession of the females.

The locality chosen for nidification is always one of the most arid desert places, and always amongst the rocks, choosing a place where its nest will be best shielded from animals of prey. Its nest is nothing beyond a hole scratched in the ground and lined with a few leaves or grass-bents gathered together to form a scanty bed for its eggs. These latter, which are stated by Bailly to vary in number from nine to eighteen, are deposited in the month of May; but Naumann writes that it rarely lays before the early part of June, and sometimes not until July, and that the number of eggs varies between twelve and fifteen, sometimes as many as twenty-four being deposited.

The eggs of this species are in shape and size similar to those of the common Redleg, but somewhat larger and much paler, the ground-colour being pale yellowish, and the markings small and very pale, so that at the first glance the egg looks almost uniform yellowish. Although it is doubtful whether the appellation "Greek" Partridge is not more applicable to *Caccabis chukar* than to the present species, yet, as the European bird is generally known by that name from the eastern species, I have deemed it best to retain it for the western bird, and to call *Caccabis chukar* by the name used by Dr. Jerdon, viz. Chukor Partridge.

The specimen figured is an adult male from Naples, in the collection of Lord Lilford; and in the background to the left I have had a specimen of *Caccabis chukar* from the island of Rhodes figured for comparison as regards the colour of the throat. In the article on the Chukor Partridge woodcuts are given of the heads of both that and the present species, to show the very distinctive character in the distribution of the black at the base of the bill.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Switzerland (*Möschler*). *b*, ♀ *jun.* Switzerland (*Dr. Kutter*). *c*, *pull.* Near Barcelonette, Basses-Alpes (*E. Fairmaire*).

*E Mus. Lord Lilford.*

*a*, ♂, *b*, ♀. Switzerland (*Möschler*). *c*, ♂, *d*, ♀. Naples, February 15th, 1875 (*L.*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. Usern, Switzerland (*Nager Donazian*).

# CACCABIS CHUKAR.

(CHUKOR PARTRIDGE.)

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*Perdix græca*, Briss. Orn. i. p. 241 (1760, partim).
*Tetrao rufa*, Pall. Zoogr. Rosso-As. ii. p. 79 (1811, nec Linn.).
*Perdix chukar*, G. R. Gray, in Cuv. Animal Kingd. Griff. ed. iii. p. 54 (1829).
*Chacura pugnax*, Hodgs. Madr. Journal, 1837, p. 505.
*Pyctes* (*Chacura*) *chukor*, Hodgs. in Gray's Zool. Misc. p. 85 (1844).
*Chacura græca*, var., Rüpp. Syst. Uebers. p. 106. no. 376 (1845).
*Perdix græca*, Eversm. Journ. für Orn. 1853, p. 292.
*Caccabis rupicola*, Licht. Nomencl. Avium, p. 85 (1854).
*Chacura chukar* (Gray), Heugl. Syst. Uebers. p. 50 (1856).
*Perdix altaica*, Bp. Compt. Rend. xlii. p. 10 (1856, descr. nulla).
*Perdix synaica*, Bp. tom. cit. p. 10 (1856, descr. nulla).
*Perdix sinaica*, Bp. J. f. Orn. 1858, p. 31.
*Perdix chukart*, Bp. ut suprà.
*Caccabis saxatilis*, Tristr. Ibis, 1859, p. 35 (nec Meyer).
*Caccabis chukar*, G. R. Gray, List of Gallinæ Brit. Mus. p. 36 (1859).
*Chacura sinaitica*, Heugl. Journ. für Orn. 1861, p. 312.
*Caccabis chukor* (Gray), Jerd. B. of India, iii. p. 564 (1863).
*Caccabis chukar*, var. *pubescens*, Swinh. Ibis, 1865, p. 353.
*Caccabis synoica* (Bp.), G. R. Gray, Hand-l. of B. ii. p. 274 (1870).
*Caccabis pallescens*, Hume, Lahore to Yarkand, p. 283 (1873).
*Caccabis arenarius*, Hume, op. cit. p. 283 (1873).
*Caccabis pallidus*, Hume, op. cit. p. 284 (1873).

*Ad. Cacc. saxatili* similis, sed corpore suprà pallidiore et rufescentiore, fronte et pilei lateribus cærulescenti-cinereis nec albidis, auricularibus rufescente terminatis, gulâ ochrascenti-cervinâ nec albâ, plumis ad basin rostri ante oculos albis nec nigris, scapularibus cærulescenti-canis conspicuè ferrugineo marginatis.

*Adult Male* (Phandos, Rhodes, 11th December). Resembles *Caccabis saxatilis*, but has the upper parts lighter, more rufous, and less grey in tinge; the sides and front of the crown are not nearly white, as in *C. saxatilis*, but blue-grey; the auriculars are broadly terminated with rufous, the chin and throat are yellowish buff, and the space in front of the eye, at the base of the bill, is whitish buff, not black as in *C. saxatilis*, this last being the best characteristic, and always constant; the scapulars, especially the upper ones, are dove-blue, broadly margined with rufous, almost fox-red. Total length about 12 inches, culmen 1·0, wing 6·4, tail 3·8, tarsus 1·85.

*Female.* Similar to the male.

*Obs.* The present species is subject to great individual variation. After having examined a considerable

series I find it impossible to recognize any specific difference between the different races, the chief difference being that of shade of colour. Mr. Severtzoff, who is at present working with me, also informs me that every shade of colour, from the palest to the average Himalayan form, was met with in the same tract of country by Colonel Przevalsky when collecting in Mongolia. I find also some slight variation in size, as will be seen from the following table of measurements of examples from various localities:—

| | Culmen. inch. | Wing. inches. | Tail. inches. | Tarsus. inches. |
|---|---|---|---|---|
| Rhodes, ♀, ♂ | 0·80–0·95 | 5·90–6·5 | 3·50–3·9 | 1.65–1·8 |
| Cyprus | 0·92 | 6·40–6·5 | 3·50–3·6 | 1·70–1·8 |
| Asia Minor, ♀, ♂ | 0·85–0·95 | 5·80–6·1 | 3·40–3·6 | 1·60–1·65 |
| Palestine | 0·90 | 6·30 | 3·50 | 1·80 |
| Persia | 0·80–0·9 | 6·25 | 3·25–3·4 | 1·70–1·8 |
| Mesopotamia | 0·90–1·0 | 6·40–6·7 | 3·65–3·9 | 1·85–2·0 |
| ? Altai | 0·90 | 6·30 | 3·90 | 2·0 |
| India | 0·75–0·9 | 6·30–6·6 | 3·60–3·7 | 1·65–1·75 |

Mr. Severtzoff further informs me that in Turkestan he remarked the same individual variation in coloration of plumage as was observed in Mongolia by Colonel Przevalsky, but to a lesser degree. I may here remark that the description of *Caccabis sinaica*, the pale form of the present species, was not published until after the death of Bonaparte. The name was published in 1856; but no description was then given. However, a paper giving diagnoses of the various Red-legged Partridges was placed in the hands of the editor of the 'Journ. für Orn.' shortly before the death of Prince Bonaparte; but this was not issued until 1858.

This, the eastern representative of our European Greek Partridge, is met with in Europe only in the south-eastern countries, but is thence very generally distributed in Asia, in suitable localities, as far east as China. Although *Caccabis saxatilis* is the Red-legged Partridge of the mainland of Greece, yet, so far as I can ascertain, the present species only is found on the islands, where it is tolerably common, but does not extend further westward. I am indebted to Mr. C. G. Danford for a series of specimens from Rhodes, and to Lord Lilford for an opportunity of examining the examples collected by him, all of which are certainly referable to the present species. Several of those collected by Lord Lilford have the throat very white, nearly as white as in *Caccabis saxatilis*, whereas others have the throat yellower and darker than average Indian examples; but all have the characteristic distribution of the black at the base of the bill, and cannot be separated from true *C. chukar*. I am indebted to his Lordship for the following note, viz.:—"The very few Partridges seen by me during our stay in Suda bay, in the island of Crete, during the last days of March and the beginning of April 1874, belonged to the yellow-throated race of this species, whilst all those met with in Cyprus, where they are extremely abundant, were the white-throated; we found them principally in hilly and uncultivated ground amongst a thick growth of juniper and lentiscus, but met with many also in the wheat-fields in the valleys of the north-eastern promontory or Horn of Cyprus." The present species is also numerous in the Ionian islands, being, Lord Lilford states (Ibis, 1860, p. 238), "most abundant in Cephalonia, Santa Maura, Kalamo, Petala, Arkudi, and Meganisi." Dr. Krüper met with it on the island of Naxos, where, he says, it breeds in the more elevated portions of the mountains; and Messrs.

Elwes and Buckley say (Ibis, 1870, p. 328) that on the islands of Imbros and Lemnos, off the entrance of the Dardanelles, it is so numerous that, as they were assured by a well-known sportsman at Constantinople, fifty brace might with ease be bagged by a good shot at the end of August. These gentlemen did not see or hear of it in Bulgaria; but Messrs. Alléon and Vian state (Rev. et Mag. de Zool. 1873, p. 261) that the species which occurs near Constantinople is true *C. chukar*; and they describe a specimen, clearly giving the distinguishing characters. They add that it is resident near Constantinople. In Asia Minor it is said to be common in suitable localities; and I have specimens obtained near Smyrna. Canon Tristram met with it in Palestine, where it is, he says, the Partridge of the country. I have examined examples obtained by him there which are undoubtedly true *C. chukar*, but are a trifle paler than specimens from the Greek islands. Mr. Wyatt did not often met with it in the peninsula of Sinai, where, he says, it is restricted in its habitat, keeping to the higher wádys; and he further writes (Ibis, 1870, p. 16) as follows:—"It frequents the highest parts of the mountains in the neighbourhood of Jebel Musa; it also occurs near Serbal, I believe, though I never met with it there myself. I found it much more common on the highlands of Edom and at Petra than in the peninsula." It is, Mr. Blanford informs me, "widely distributed in Persia, at all elevations up to 10,000 feet, keeping to hills, especially those covered with small bushes, and often found in large coveys. I have seen at least twenty together in August on the Elburz. The flesh is usually rather dry and less well flavoured than that of other Partridges." And in a note furnished to Mr. Blanford, and lent to me by that gentleman, Major St. John writes as follows:—"I have shot this bird at all elevations from 10,000 feet in the Elburz to the base of the hills near Bushire. In the wild moorland country which fringes the oak-forests of Fárs on the north, it is especially abundant. I have killed twelve and a half brace before breakfast in September near the Khan-i-zinián caravanserai, twenty-five miles west of Shiráz. Contrary to what is recorded of its habits in the Himalayas, it avoids cultivation in Persia."

It is stated by Mr. Hume to be common in Sindh. This gentleman writes (Stray Feathers, i. p. 226) as follows:—"The Sindh Chukore, though not specifically separable, is a great deal paler than that found in Kumaon, the valleys of the Jumna, Ganges, Sutlej, and Beas, so far as these lie within the hills, and the lower of the intermediate hill-ranges. As we travel further west an intermediate type of colouring is noticeable; and, as a rule, the birds from the neighbourhood of Murdan, though quite as dark on the upper surface and vent &c., are much paler, in fact almost as pale as the Sindh birds, so far as the general tone of colour is concerned. The Sindh birds closely resemble the race from Ladak, which I designated (Lahore to Yarkand) *pallescens*; but that bird is characterized by its larger and stronger bill, and by the almost entire absence of any rufous tinge on the crown, occiput, and nape; whereas in the Sindh birds the bills run slightly smaller than those of the common Himalayan form, and there is a decided rufous tinge on the occiput and nape. It is found throughout the rocky hills that divide the Punjab from Afghanistan and Khelat and the latter from Sindh." I reproduce these data respecting the Sindh bird as given by Mr. Hume, but may add that I quite agree with him that there is no specific distinction between these pale and dark races of the Chukor Partridge, as every intermediate variety is to be found. In India, Dr. Jerdon writes (B. of India, ii. p. 565), it is found throughout the western Himalayas, from the lowest range to the snows, and passing

over into Thibet; but it does not extend so far east as Sikkim. It is also met with in the Salt range of the Punjab and its more alpine regions, passing into Afghanistan." Captain Beavan says (Ibis, 1868, p. 384) that it "is very generally found on the hills about Simla; and the first time I saw wild specimens was in April 1866, when, marching up to that station from Umballah by the new cart-road, I put a pair up off the road-side. I have since had numerous skins sent to me from Kotgurh, a small village in the interior some fifty miles beyond Simla, where numbers are annually snared by the natives, who sell their skins to the European inhabitants of Simla. They seem to frequent tolerably open hill-sides, where cacti abound." Colonel Irby also speaks of the present species as being common in Kumaon, and especially numerous at a place called Jullut or Moonsheyaree, seven days' march from Almorah. It was found in Yarkand by Dr. Henderson, who says (Lahore to Yarkand, p. 284) that "it swarms (wherever the rivers debouch into the plains) over a belt of country some ten or fifteen miles in width."

Mr. Severtzoff informs me that it is found throughout the entire Thian Shan, south-west and north-east of the river Ili, but it is questionable if it occurs in the true Altai range, north of Zaissan Lake. It inhabits the mountains near Samarcand, and in the small desert-ranges north of Bokhara, westward to and including the Sheihdjeili range on the right bank of the Oxus, some fifty miles N.E. of Khiva. Colonel Przevalsky met with it in the mountains of Western China which skirt the desert of Gobi; and Mr. Swinhoe states (P. Z. S. 1871, p. 400) that it inhabits "North China, southwards to the north bank of the Upper Yangtsze, in the gorges. Chinese specimens have a deep blush of rosiness over their upper plumage, which is not seen in Himalayan skins." I must not omit to name that a Red-legged Partridge, said to be the present species, has been introduced into St. Helena. Mr. Melliss writes (Ibis, 1870, p. 102) that its existence there was mentioned in Cavendish's 'Travels' as early as the year 1588; and, he adds, there is no record to show whence it was introduced, but it is most probably the present species, though a closer examination of specimens from St. Helena is desirable.

Like the Greek Partridge the present species frequents rugged, mountainous localities, generally such as are sterile or covered with bushes where it can find shelter. Lord Lilford, who met with it in the Ionian Islands, says (Ibis, 1860, p. 238) that it "haunts the stony hill-sides, never, as far as my own observation goes, descending to the plain. It is not easy to make a good bag of these birds, even in localities where they are numerous, as the coveys disperse on being disturbed, and, on alighting, each bird takes a line of its own, and sets off running to the nearest covert, which in these parts generally consists of thick evergreen scrub, from which it is very difficult to flush them." As a rule the Chukor is averse to taking flight, and will neither fly far nor often, trusting rather to its legs to carry it out of the way of danger. Dr. Henderson relates (*l. c.*) that in Yarkand the natives know well how to take advantage of this. "The Yarkandies," he writes, "disdain the use of fire-arms for the chase of these birds. A party of men mounted on ponies and armed with whips pursue a covey, and in a very short time succeed in capturing the whole flock. The Chikone will never rise more than twice; and after that, as they run, they are easily overtaken and knocked over with whips. This sport is carried on over the most terribly rough ground in the rocky valleys; but the Yarkand ponies traverse at the top of their speed country that most men would only crawl over with the utmost caution and deliberation."

Like the Greek Partridge it is extremely pugnacious and quarrelsome, especially in the spring of the year; and it is said to have been kept tame for fighting in former ages, as game-cocks were, not so long ago, in England. Naumann says that the inhabitants of Cyprus still (when he wrote) kept them for this purpose; and he remarks that history relates that the Roman Emperor Alexander Severus was extremely fond of this sport. The present species is very easily tamed; and, according to Tournefort (Voy. au Levant, i. p. 386), the inhabitants of Scio and other islands of the Greek archipelago keep tame Chukor Partridges, which they allow to seek food in the fields like poultry. Baron König Warthausen gives (J. f. O. 1870, p. 66) the following extract from the journal of Samuel Kiechel, who travelled through almost the whole of Europe between 1585 and 1589:—"In this island (Rhodes) many Partridges are kept, some peasants having as many as 400 or 500, more or less. They breed, and are as tame as geese. In the morning a boy or girl drives them out into the fields; and they fly away and search for food during the day. Towards evening the child goes out in search of them; and when they hear the child's call they fly towards him or her, and are led back to the house of their owner." The Chukor Partridge breeds like the Greek Partridge, their nests and eggs being very similar. Lord Lilford, who found it breeding in Cyprus, writes to me as follows:—"We found several nests, containing from thirteen to sixteen eggs each, and consisting of dry grasses with a few withered leaves, and in one instance a good many feathers; these nests were placed in the centre of low, very thick-growing lentisk bushes, in one case close to a much frequented mule-track. The eggs are remarkably small for the size of the bird; but these eastern birds are themselves smaller than those of South Italy and Sicily. In certain portions of Cyprus very fine mixed bags might be made in the autumn of these Partridges, Francolins, Quails, Woodcocks, and hares; but, though the ground is not difficult to travel, the density of the evergreen scrub renders good dogs and plenty of them absolutely necessary."

A series of eggs of the Chukor Partridge in my collection from Palestine differ from those of the common Redleg in having the ground-colour paler, and the markings, as a rule, less clearly defined; but they vary much, *inter se*, some being pale whitish buff with the smallest possible reddish dots, whereas others are tolerably closely marked with dull rufous blotches. In size they vary from $1\frac{1}{2}$ by $1\frac{7}{40}$ inch to $1\frac{25}{40}$ by $1\frac{9}{40}$ inch. I have not deemed it necessary to give a Plate of the present species, as the chief characteristic, viz. the distribution of the black at the base of the bill, is not so easily shown on a Plate; but the woodcuts of the heads of the two species at the end of the present article will clearly show this character, that on the right being *Caccabis saxatilis*, and that on the left *Caccabis chukar*.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Phandos, Rhodes, December 11th, 1874 (*C. G. Danford*). *c*, ♂, *d*, ♀. Near Smyrna, January 10th, 1866 (*G. v. Gonzenbach*).

*E Mus. Lord Lilford.*

*a*, *b*, ♂, *c*, ♀. Cyprus, April 29th, 1875. *d*. Capo di Gata, Cyprus, May 8th, 1875 (*L.*). *e*, ♀. Smyrna

(*Verreaux*). *f*, ♂. Nazareth, March 9th, 1864 (*H. B. Tristram*). *g*, ♀. Ghor of Jordan, March 11th, 1864 (*H. B. T.*). *h, i, j, k, l.* India.

### *E Mus. Brit. Reg.*

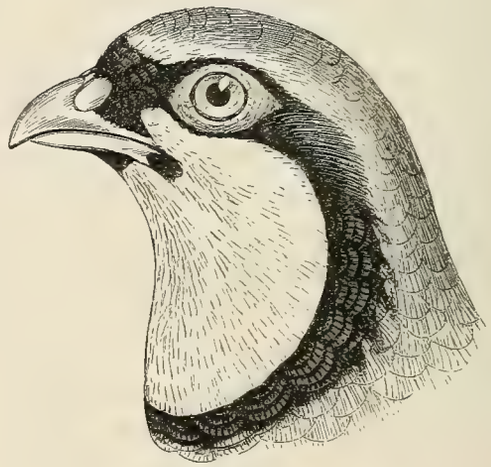
*a, b.* El Bussah. *c, d, e.* Altai Mountains? (*Brandt*). *f, g.* Persia, labelled *C. pallidiceps* (*Loftus*). *h.* Kerrind, Persia, June 14th, 1851. *i.* Mungerrah, Persia. *k, l.* Himalayas. *m, n, o, p.* Nepal (*Hodgson*). *q.* Thibet (*Earl Gifford*).

### *E Mus. Howard Saunders.*

*a, b.* India.



*Caccabis chukar.*



*Caccabis saxatilis.*



1. RED-LEGGED PARTRIDGE.
CACCABIS RUBRA

2. BARBARY PARTRIDGE.
CACCABIS PETROSA

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# CACCABIS RUFA.

(RED-LEGGED PARTRIDGE.)

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*Perdix rubra*, Brisson, Orn. i. p. 236 (1760).
*Tetrao rufus*, Linn. Syst. Nat. i. p. 277 (1766, partim).
*La Perdrix rouge d'Europe*, Buff. Hist. Nat. Ois. ii. p. 431, pl. xv. (1771).
*Tetrao rufus*, L., Gm. Syst. Nat. i. p. 756 (1788).
*Perdix rufa* (L.) β, Latham, Ind. Orn. ii. p. 647 (1790).
*Perdix rubra varia*, J. F. Naumann, Naturg. Vög. Deutschl. vi. p. 566 (1833).
*Perdix rubra pallida*, J. F. Naumann, tom. cit. p. 567 (1833).
*Perdix rubra candida*, J. F. Naumann, tom. cit. p. 567 (1833).
*Caccabis rufa* (L.), G. R. Gray, Gen. of Birds, iii. p. 508 (1849).
*Perdix rufidorsalis*, C. L. Brehm, Vogelfang, p. 266 (1855).
*Perdix rubra intercedens*, A. E. Brehm, Allg. deutsch. naturh. Zeit. 1857, p. 472.
*Caccabis rubra communis*, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 11 (1866).

*Red-legged Partridge*, *French Partridge*, English; *Perdrix rouge*, French; *Perdiz*, Spanish; *Pernice comune*, Italian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 150; Werner, Atlas, *Gallinacés*, pl. 13; Fritsch, Vög. Eur. taf. 29. fig. 9; Naumann, Vög. Deutschl. taf. 165. figs. 1, 2; Gould, B. of Eur. pl. 260; id. B. of G. Brit. iv. pl. xiv.; Roux, Orn. Prov. pls. 257, 258.

♂ *ad.* fronte et pileo cinereis, hôc in parte centrali rufescente lavato, pileo imo, nuchâ et collo postico rufescenti-brunneis: corpore suprà rufescenti-fusco, dorso imo, scapularibus et tectricibus alarum cinereo tinctis: remigibus nigro-fuscis, primariis omnibus (extimo excepto) et secundariis externis in pogonio externo ex parte ochraceis: rectricibus centralibus dorso concoloribus, reliquis saturatè ferrugineis: gulâ cum capitis lateribus albis et lineâ superciliari albâ ad nucham ductâ: ad basin mandibulæ utrinque et in mento centraliter maculâ nigrâ: a rostro per oculum circum gutturem fasciâ nigrâ productâ: gutture infra hanc fasciam grisescenti-albido, ubique nigro guttato et vix brunneo lavato, in parte imâ grisescenti-brunneo: abdomine et subcaudalibus pallidè rufescentibus: hypochondriis variegatis, plumis ad basin pallidè rufescentibus, posthac cærulescenti-cinereis fasciâ albâ et fasciâ subapicali nigrâ notatis et ferrugineo terminatis: rostro et pedibus rubris, iride rufescenti-fuscâ.

♀ *ad.* mari similis, sed sordidior et vix minor.

*Juv.* sordidior, corpore suprà brunnescentiore: secundariis intimis vix brunneo variegatis et tectricibus alarum ochrascente albido notatis: fasciâ collari nullâ: gutture imo nigro guttato.

*Adult Male* (Norfolk). Forehead to the centre of the crown ash-grey, gradually merging into reddish brown, which colour extends over the hinder portion of the crown, nape, and hind neck; upper parts

generally reddish brown, tinged with grey, this latter colour being most marked on the wing-coverts, scapulars, and lower back; quills blackish brown, a portion of the outer web of all the primaries, except the first, and of the seven outer secondaries ochre-yellow, the four central rectrices coloured like the back, the remainder being deep foxy red; throat and cheeks white, and a line of white passes from the base of the upper mandible over the eye down to the side of the hind neck; on each side of the lower mandible at the base, and at the base of the mandible on the chin, is a black spot; from the bill through the eye a black band passes, widening and meeting the corresponding band on the fore neck, enclosing the white on the throat; below this band the lower neck is greyish white, spotted and splashed all round the neck with black, and slightly tinged with brown, and on the lower part of the throat merging into greyish brown; breast dark French grey, lower breast, abdomen, under tail-coverts, and tibial feathers light reddish; flanks with the feathers very richly variegated, being light reddish at the base, then rich blue-grey, then crossed by a white bar, then by a subterminal, clearly defined, black bar, and finally terminated with bright foxy red; bill, naked space about the eye, and feet bright red; iris hazel, with a reddish tinge. Total length about 13 inches, culmen 0·75, wing 6·0, tail 3·65, tarsus 1·7.

*Adult Female.* Very closely resembles the male, but is a trifle duller in colour, and wants the knob on the tarsus.

*Young* (Leadenhall Market, September). Resembles the adult, but is much duller in colour; some of the inner secondaries and wing-coverts variegated with brown, and marked with yellowish white; throat dirty white, the black collar wanting, the lower throat being merely closely spotted with black.

*Obs.* Specimens from Spain are a trifle richer in general coloration than others from England; and the two I have examined in Messrs. Salvin and Godman's collection, from the Azores, have the black collar much broader than many others I have seen.

The common Red-legged or French Partridge, as this species is usually called in England, has a comparatively small range, being met with only in Western and Southern Europe, Madeira, and the Azores; but having been introduced into Great Britain it has now become tolerably common here, and has been found even as far north as Scotland.

Mr. A. G. More, writing on its range in England, says (Ibis, 1865, p. 428), "Introduced about one hundred years ago, the Red-legged Partridge has become very numerous in some of the eastern counties, where, in the struggle for life, it has been stated to have in some places nearly supplanted the common Grey Partridge. There must be some local influences that limit the range of the Red-legged Partridge in this country, since the attempts made to establish it in Dorset, Hereford, Derby, and East Yorkshire appear to have failed; nor has the bird hitherto spread to any of our south-western shires. I am informed by Mr. T. Gough that it has bred regularly of late years in Westmoreland. The bird is returned as now breeding occasionally in Kent (*Mr. G. Jell*), in Essex, Herts, Oxford (occasionally), Bucks, Suffolk, Norfolk, Cambridge, Huntingdon (occasionally), Northampton (occasionally), Lincoln, Rutland (occasionally), and West York (very rarely). The Rev. F. J. Scott believes that it is established in the hills of Gloucestershire; but some confirmation of this last locality appears desirable." As stated by Mr. More, the eastern counties of England are those where this species appears to have found a home most suited to it; and in Norfolk and Suffolk it is numerous. Mr. H. Stevenson, in his

exhaustive article on this species (B. of Norfolk, i. p. 405), writes as follows:—"Its introduction into the eastern counties dates only from the close of the last century, when, about the year 1770, the Marquis of Hertford and Lord Rendlesham are recorded to have had large quantities of eggs imported from the continent, and the young birds, hatched under domestic fowls, were turned off at Sudbourn and Rendlesham, in Suffolk, on the respective estates of the above noblemen. From thence they soon spread to other portions of the county, and the adjoining parts of Norfolk; and in Daniel's 'Rural Sports' we find the author speaking of a covey of fourteen discovered by himself in 1777 within two miles of Colchester, which in a very thick piece of turnips, 'baffled for half an hour the exertions of a brace of good pointers to make them take wing; and the first which did so immediately *perched* on the hedge, and was shot in that situation without it being known what bird it was.' Others are also described by the same writer as having been killed in 1799, at Sudbourn, where they were originally turned off. During the next twenty years, they would seem to have increased rapidly, as in 1826 they are thus referred to by Messrs. Sheppard and Whitear:—'These birds are now very plentiful in some parts of Suffolk. We have seen at least one hundred and fifty brace in a morning upon Dunningworth heath; and they are found in greater or less numbers from Aldborough to Woodbridge; a few are also sometimes seen in Norfolk.' It appears, however, that other game-preservers, in both Norfolk and Suffolk, following the example of the Marquis of Hertford, procured eggs from the Continent, and were equally successful in extending the breed. Mr. Alfred Newton has furnished me with the following additional particulars, as communicated to him by his late father:—'The year after Lord Cornwallis died (1823) Lords Alvanley and De Ros hired Culford; they had a large number of Red-legged Partridges' eggs sent over from France, which they distributed about the neighbourhood, keeping, however, some at Culford. The Duke of Norfolk had a good many at Fornham; so also had Mr. Waddington at Cavenham. The eggs were set under hens; and nearly all of them hatched. This was the first introduction of the Red-legged Partridge into West Suffolk. They had been plentiful in the eastern division of the county several years before, where Lord Hertford had introduced them.' Mr. Newton refused to have any eggs; but in a few years the birds spread to Elveden, and thence, of course, very rapidly into the adjacent parts of Norfolk."

It does not inhabit Scotland; and an attempt referred to by Messrs. Baikie and Heddle (Nat. Hist. of Ork. p. 56) to introduce it into Orkney appears to have failed, as nothing further has been heard of it there. Mr. Robert Gray (B. of W. of Scotl. p. 243) states that Mr. James Mearns shot a specimen within two miles of Aberdeen, in January 1867, which appears only to have been a chance visitor from the south. According to Thompson (B. of Irel. ii. p. 65), it was "introduced into the county of Galway, in Ireland, about thirty years ago, but does not seem to have thriven there." He refers to two specimens having been sent from Galway to Dublin to be stuffed previous to 1844; and one was, he says, shot near Clonmel on the 4th February, 1849.

It does not occur in Scandinavia, Russia, or Finland; and its occurrence in Germany is very doubtful. Naumann states that it is not found there; and Dr. Altum writes (J. f. O. 1863, p. 114) that its occurrence in Munsterland is based on a picture; but Mr. F. Tiemann states (J. f. O. 1865, p. 218) that it has occurred in Silesia.

I do not find any record of its occurrence in Holland; and in Belgium it is of very acci-

dental occurrence, and attempts to naturalize it in the vicinity of Liége have resulted in failure. Throughout the whole of France it is generally distributed, being, however, local and somewhat rare in the northern districts, but extremely numerous in the south. The Rev. A. C. Smith (Ibis, 1868, p. 450) says this is the only recognized Partridge of Portugal, and is very abundant; and that Dr. Tristram writes of it:—"Your specimen is much brighter than our English Red-leg; the chestnut on the head and upper back is much brighter, and the ash-brown of the lower back much more distinct and contrasted with the rufous above; the ochreous abdomen and lower tail-coverts are much paler." But Dr. E. Rey, writing in 1872, says (J. f. O. 1872, p. 154) that it is now nowhere common in that country, chiefly owing to the law which permits free shooting, though wild cats may to some extent have assisted in diminishing its numbers. In Spain it is extremely common, and, as Lord Lilford states (Ibis, 1875, p. 8), "is *the* Partridge of Spain, from Irun to Tarifa, and from Lisbon to Barcelona;" but it does not occur on the Rock of Gibraltar, where *Caccabis petrosa* is alone found. Mr. Howard Saunders speaks also of it as being "common everywhere" in Spain. In the Balearic Islands the present species is the only species of the family which occurs; and Lord Lilford says this is the case also in Corsica and Elba. In Switzerland it is said (J. f. O. 1860, p. 393) to be rare, and unknown in the neighbourhood of Boll; but it occurs in limited numbers in the Jura and in some parts of Canton Wallis. Bailly says that in Savoy it is more numerous than *Caccabis saxatilis*, but less so than the common Grey Partridge; and on the mainland of Italy it is generally distributed and numerous; but Lord Lilford says it becomes decidedly scarce in the southern provinces, and he never met with a specimen in the markets of Naples. In Sardinia and Sicily it does not occur; and Mr. C. A. Wright includes it (Ibis, 1869, p. 252) amongst doubtful occurrences in his third appendix to his "List of Birds observed in Malta and Gozo." I do not find any record of its occurrence further eastward, except that Dr. A. Fritsch, writing on the ornithology of Bohemia, says (J. f. O. 1871, p. 313) that attempts were made to introduce it in the Trauenberg district in 1863; and about ten years previously Count Fürstenberg made a similar trial in the Pürglitzer forest, which did not succeed, as the birds could not stand the severe winters. It is stated by Dr. L. Buvry (J. f. O. 1857, p. 67) to occur in North-west Africa; but neither Loche nor any other of the later writers on North-west African ornithology includes it, and Loche states positively that only *Caccabis petrosa* is found in Algeria.

It occurs at Madeira and in the Azores, in the latter, according to Mr. Godman, inhabiting the eastern and central groups—and is said to be very abundant in the mountains of St. Mary's, and occasionally found at St. Michael's and Terceira.

From personal experience I know scarcely any thing respecting the habits of this Partridge, and cannot do better than transcribe Mr. Stevenson's notes on it as observed by him in Norfolk. This gentleman writes (B. of Norfolk, i. p. 408) as follows:—"The shy, restless nature of this species, continually 'footing it' before the guns, and taking wing only when closely pressed or far out of reach of any ordinary fowling-piece, renders it particularly obnoxious to sportsmen on the more closely cultivated and enclosed portions of the country. In such districts many are the volleys of something more than small shot called forth by the provoking habits of these birds in the early part of the season. No sooner do the guns enter the turnips at one end of the field, than the wary Frenchmen are seen topping the opposite fences one after another,

alighting again on the adjoining stubbles, and, with heads erect, making off at a most incredible pace. Scattering themselves in all directions, they unsettle the English birds that would otherwise lie well in good cover—and of course, from their running before the dogs, were still more objectionable under the old style of Partridge-shooting with pointers or setters. Thus trying his patience in every possible way, it is no great wonder if the sportsman, under such circumstances, delights to bag every Red-leg he can, and considers no distance too far to 'let fly' at his feathered tormentors. Nor is he repaid after all his trouble and many disappointments by securing a delicacy for the table, the chief attraction of this species consisting far more in its handsome plumage than its edible qualities.

"Undoubtedly a fine old male, with its vermilion-coloured beak and legs, its dark gorget, and lovely feathers on the flanks and thighs, is a very striking object, and contrasts well with the more sombre and uniform tints of the common Partridge, when the day's 'bag' is laid out for inspection. Unsuited, however, as is the usual style of shooting to the habits of French Partridges, they afford fine sport in November and December, when most of the beet and turnips are off the lands, as they then congregate on the ploughed fields, and can be driven over the gunners placed under cover at convenient distances. In fact the 'driving' system now so generally adopted on the large estates, is unquestionably the proper method of shooting Red-legs, and one which tries well the mettle of the sportsmen, as they mount up higher than the English birds, and fly, when well on the wing, at an almost incredible pace. Yet, at the same time, it must be remembered that such sport can be enjoyed with impunity only on extensive manors, well stocked with birds, since, if attempted too often on limited areas, the Partridges may be thus driven off the land altogether, as surely as by the too frequent use of the 'kite' at the latter part of the season. A very effectual time also for reducing their numbers is immediately after a good fall of snow, before a night's frost has hardened the surface. No longer able to run, and still unwilling to fly till obliged to take wing, they seem deprived for the time of their usual sagacity, and, seeking shelter in the thickest hedge-rows, if in the enclosed parts of the country, or in the gorse and broom coverts of the light-land districts, afford excellent sport for a couple of guns 'doubling' the fences, with a steady dog to flush the birds. Advantage is likewise taken by some persons of the altered character of the Red-legs when the snow is on the ground; for by flushing them again and again, and following them up directly, the birds become sufficiently exhausted to be run down one after the other—a method not unfrequently adopted by poachers in districts not strictly preserved. Under similar circumstances our English birds, if they seek cover at all, betake themselves to the thickest plantation, frequenting the hedge-rows even less than at other times; but they prefer, for the most part, the open fields, where their dark forms are plainly visible on the white ground, and where they are more difficult than ever to approach within shot. There is no reason, however, to suppose from this habit that the Red-leg is more susceptible of cold than the Grey Partridge, as, with the same opportunities of procuring food, I have never found their condition affected by the sharpest weather; indeed they come to us from a country where the winters are uniformly more severe than our own.

"They frequent both heavy and light lands; and I have frequently found them plentiful on heavy-land farms where the English birds have been comparatively scarce, thus filling a void; for as French birds thrive well where, before their introduction, the Grey Partridge was not

found, it is unfair to suppose that the absence of the latter is now owing to the pugnacity of the Red-legs. In such localities, by pursuing them in wet weather, when the sticky soil prevented their running, I have been pretty successful in making a bag; and they may be readily killed during a drenching shower if the gun-caps or cartridges will but go off when required. Strong on the wing, and not often affording a close shot, they require very hard hitting, and will frequently carry off the best part of a charge, to die of their wounds after a prolonged flight; whilst many a bird, when finally brought to bag, shows evidence of former injuries from long shots, so frequently, though somewhat cruelly, made at them at almost impossible distances. There is one other particular in which the French Partridge differs entirely from our common species—namely, in its habit of occasionally perching in trees, flying up into the thick foliage like a Pheasant or Wood-Pigeon—an action which at first not a little astonished our local sportsmen, many of whom most probably entertained the same opinion as an old veteran Partridge-shot, who assured me that the first time he met with a covey of Red-legs, and some of them took to the trees, 'he fully believed the birds had gone mad.' On one occasion, whilst shooting on a farm where they were very numerous, I observed this course adopted by single birds in three instances on the same day; and more recently I have known a good-sized covey flushed from the top of an oak timber; and single birds, when chased from place to place in snowy weather, fly up to and settle in the tops of oak pollards. They may also be seen sitting occasionally in a long row on the top of a wall, the ridge of a barn-roof, or on an ordinary park fencing. It is not an unusual custom in this country, when nests of the Grey Partridge have been mown out, or discovered in too exposed situations, to transfer the eggs thus taken to a French Partridge's nest; and in several instances I have known them successfully hatched, and the young birds treated in every respect as her own by the foster-mother. It is said, however, that the running habits of the French birds are generally fatal to the English nestlings, which, to use a thoroughly Norfolk expression, are 'drabbled' to death in attempting to keep up with such untiring pedestrians. I mention this only as a common belief amongst gamekeepers, being unable to vouch for its accuracy; but I have more than once observed, in the shooting-season, a pair of old French birds rise from the turnips at the head of a covey of English, though, of course, it is quite possible in such cases that the Red-legs had 'run up' the Grey Partridges, and thus all had risen together.

"French Partridges, both on the wing and in the field, are easily recognized at a distance by their larger size and darker tints of plumage, to say nothing of the difference in the noise of their wings in flying. When alarmed they carry their heads erect, turning them in all directions to catch the sound of any approaching danger, and continue this even when running at their greatest speed. If undisturbed, however, and feeding leisurely, their appearance (as seen through a glass) is very different, and, with feathers puffed out and rounded backs, whilst slowly searching the ground for grain and insects, they look almost as large as Pheasants. They are partial to the shelter of thick hedge-rows and plantations, but, unless driven into such cover, are seldom found far from the outer fence, through which they can run on the slightest alarm; and in walking quietly up a wood-side where these birds are plentiful, it is very usual to see one or more Red-legs issuing from the hedge-bottom, and hurrying along under the bank. They are

fond also of basking in thick rushy carrs; and in low meadows will hide in the sedgy margins of the watercourses, where I have shot them late in the season when looking for Snipe."

It has been supposed by some observers that a partial migration of this species takes place on our east coast; but after going very fully into this question, Mr. Stevenson shows that the balance of evidence is against this being the case; and I fully agree with him in the conclusions at which he has arrived.

Eggs of this Partridge in my collection from Norfolk are yellowish buff or stone-buff, sprinkled with dull reddish markings, which in some consist only of fine dots spread over the surface of the shell, whereas in others there are irregular blotches here and there. One specimen is blotched with pale purplish pink on a pale stone-buff ground. In size my specimens vary from $1\frac{24}{40}$ by $1\frac{7}{40}$ to $1\frac{26}{40}$ by $1\frac{10}{40}$.

The specimen figured, on the same Plate with *Caccabis petrosa*, is an adult male from Norfolk, and is the bird described, this and the female being in my collection; but the young male described is in the collection of Mr. J. H. Gurney, jun.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Norfolk. *b*, ♀. Near Hampstead, July 1871 (*Davy*).

*E Mus. Salvin and Godman.*

*a*, *b*. St. Mary's, Azores, June 1865 (*F. D. Godman*).

*E Mus. J. H. Gurney, jun.*

*a*, ♀. Northrepps, Norwich, December 30th, 1865 (*J. H. G.*). *b*, *juv.* Leadenhall Market, September 1870. *c*. Madrid, 1867.

*E Mus. Howard Saunders.*

*a*, ♂. Valencia, January 13th. *b*, ♂. Malaga, December 24th.

*E Mus. Lord Lilford.*

*a*, *b*, ♂, *c*, ♀. Madrid market, April 1865 (*L.*).

# CACCABIS PETROSA.

(BARBARY PARTRIDGE.)

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*Red-legged Partridge from Barbary*, Edwards, Nat. Hist. p. 70, pl. 70 (1747).
*Perdix rubra barbarica*, Briss. Orn. i. p. 239 (1760).
*Tetrao rufus*, Linn. Syst. Nat. i. p. 277 (1766, partim).
*La Perdrix rouge de Barbarie*, Buff. Hist. Nat. Ois. ii. p. 445 (1771).
*La Perdrix de Roche*, Buff. tom. cit. p. 446 (1771).
*Tetrao petrosus*, Gmelin, Syst. Nat. i. p. 758 (1788).
*Perdix rufa* γ, Lath. Ind. Orn. ii. p. 647 (1790).
*Perdix petrosa* (Gm.), Lath. tom. cit. p. 648 (1790).
*Alectoris*, Kaup (*Perdix petrosa*, Lath.), Natürl. Syst. p. 180 (1829).
*Caccabis petrosa* (Gm.), G. R. Gray, Gen. of Birds, iii. p. 508 (1849).

*Pernice di Sardegna*, Italian; *El Hedjel*, Moorish.

*Figuræ notabiles.*

Edwards, *l. c.*; Werner, Atlas, *Gallinacés*, pl. 14; Fritsch, Vög. Eur. taf. 29. fig. 6; Gould, B. of Eur. pl. 261. fig. 1; Roux, Orn. Prov. pl. 260.

♂ *ad.* pileo centrali a basi rostri, nuchâ et collo postico castaneis, capitis et pilei lateribus cum gulâ pallidè cærulescenti-cinereis: torque collari castaneo, lateraliter latiore, et albo guttato: dorso et corpore suprà grisescenti-brunneis: remigibus nigricanti-fuscis, primariis (extimo excepto) dimidio apicali in pogonio externo ochrascentibus, secundariis pallidioribus indistinctè nigro-fusco vermiculatis: scapularibus saturatè cinereis valdè castaneo marginatis: rectricibus centralibus dorso concoloribus et vix nigro-fusco vermiculatis, reliquis saturatè castaneis: gutture imo cinereo, pectore pallidè rufescente: abdomine rufescenti-cervino, hypochondriis ut in *Caccabe rufâ* picturatis: rostro et pedibus rubris: iride fuscâ.

♀ *ad.* mari similis, sed vix minor et sordidior.

*Adult Male* (Sardinia, January). Centre of the crown from the base of the bill, nape, and hind neck rich chestnut-red; sides of the head, above and below the eye, and throat light bluish ash or French grey; below this is a collar of rich chestnut-red, very broad on the sides of the neck and narrow in the centre, being marked with small white round spots; back and rump greyish brown; quills blackish brown, all the primaries, except the first, with the terminal half of the outer web deep ochre-yellow, secondaries lighter brown, very indistinctly vermiculated on the outer web with dark brown, outer scapulars and some of the adjoining wing-coverts deep bluish ash, broadly margined with chestnut-red, remaining wing-coverts like the back; the four central rectrices coloured like the back, and slightly vermiculated with dark blackish brown, the remaining rectrices dark foxy red; throat, below the red collar, bluish ash; breast light reddish, this colour becoming rufous buff on the abdomen and under tail-coverts; flanks marked with white, black, and foxy red, or chestnut, as in *Caccabis rufa*; beak, the bare space

round the eye and legs red; iris hazel. Total length about 13 inches, culmen 0·9, wing 6·1, tail 3·75. tarsus 1·85.

*Adult Female.* Resembles the male, but is a trifle less brightly coloured, and, as a rule, a little smaller in size.

This Partridge is found only in Southern Europe, and North-western Africa and the Canaries, and does not appear to have been acclimatized in other parts of Europe. Yarrell certainly includes it in his work on the birds of Great Britain, but on very slight grounds, one specimen having been said to have been picked up dead at Edmondthorpe, about six miles from Melton Mowbray, in April 1842; and makes the improbable surmise that eggs of this Partridge may have been introduced with those of the common Red-legged Partridge. It does not appear to inhabit France, as, although Degland and Gerbe speak of it as occurring in the southern portion of that country, Jaubert and Barthélemy-Lapommeraye do not even include it as a straggler; nor has it been met with in Portugal.

In Spain it is found only on the Rock of Gibraltar, where it is resident, having probably been introduced there. Mr. Saunders also says (Ibis, 1871, p. 223) that he saw a specimen in the Murcia Museum, and Dr. Angel Guirao informed him that, though now almost extinct, it was formerly not uncommon in that province. It would appear that it is only found in a wild state in the island of Sardinia, and perhaps in Corsica; and any occasional specimens killed in Tuscany or Liguria should be attributed, in Salvadori's opinion, to escaped or turned-down birds brought by the trading vessels. It does not occur in Sicily, in spite of Malherbe's statement to the contrary. Writing on the ornithology of Sardinia, Mr. A. B. Brooke says (Ibis, 1873, p. 335), it "is the only Partridge in the south of the island, where it is still common in many parts, and is found both on the low mountains and plains. The cry of the cock bird during the months of April and May is very remarkable, loud and melancholy, and can be heard always in the early mornings and late evenings. I have heard several rumours of a different Partridge existing in the north of the island, and I was assured by a good sportsman that he had shot *P. cinerea* there; but I never saw a specimen."

It is recorded from Greece by both Von der Mühle and Lindermayer. The former says that it inhabits the elevated portions of the Taygetus mountains, in the Southern Morea. It does not seem to occur in Rumelia; and Lindermayer states that it is not met with in the southern islands of the Archipelago, nor does Erhardt include it; but Lindermayer surmises that it may be met with in Crete or Cyprus. It does not appear to occur in Asia Minor or North-east Africa, but is common and sedentary in North-western Africa, and, according to Loche, is the only species found there. Mr. W. T. Chambers-Hodgetts shot several specimens in Tripoli, where, he writes (Ibis, 1867, p. 101), it abounded amongst the steep rocky hills covered with low scrub. Mr. J. H. Gurney, jun., says that a friend of his and two companions killed upwards of seventy brace in one day at Oran, but he adds that it is almost unknown in the Sahara. Canon Tristram, however, writes (Ibis, 1860, p. 72) that he put up a covey in the Wed Nça, south of the Mzab country, where water is found only for three months in the year, and the whole vegetation is entirely confined to the narrow gorge of the Wed. Mr. O. Salvin

speaks of it (Ibis, 1859, p. 353) as being especially numerous in the Regency of Tunis; and Mr. C. F. Tyrwhitt-Drake found it everywhere numerous in Tangier and Eastern Morocco.

The various authors on the ornithology of the Canaries record it thence; and Dr. Carl Bolle says (J. f. O. 1855, p. 173) that it is the commonest game bird in the Canaries, and is wanting only on Fuerteventura and Lanzarote, as well as Palma, though in the latter place it would be supposed that it should occur, as every requisite for its existence is found there; and he further writes (J. f. O. 1857, p. 333) that it is common in the Pinal of Teneriffe, even on the cumbre and in the elevated dry cañadas, and breeds amongst the bushes at the foot of the Teyde. Mr. Godman names that he frequently saw them exposed for sale in the market-place at Santa Cruz.

In its habits this bird assimilates to the Red-legged Partridge; but Loche says that it prefers uncultivated soil to localities which have been under cultivation, and the seeds of wild plants to cereals. It feeds on seeds, insects, and caterpillars, and obtains its food generally by scratching for it in the soil. It also feeds on tender shoots. It rarely wanders far from the locality where it was hatched, and where found is a resident. Though usually peaceable and somewhat shy, the males become quarrelsome during the breeding-season, and the call-note of the female makes them forget their usual caution; hence at that season of the year they are frequently entrapped by means of a whistle with which the note of the female is imitated.

Its flight is heavy and whirring, like that of the other Partridges. It walks with celerity and ease, this being its usual mode of locomotion. Like its ally (*Caccabis rufa*) it frequently perches on trees or bushes, especially when suddenly disturbed. It is easily tamed, and becomes exceedingly familiar. Loche says that it soon fraternizes with domestic poultry, and when made a pet of will live on good terms even with the dogs and cats about the house.

It nests, like its allies, on the ground, its nest being merely a hole scratched in the soil under shelter of a bush. Loche says that incubation lasts nineteen or twenty days, and that the female alone undertakes the cares of incubation. The young run directly they are hatched, and are very carefully tended and guarded by the female, who will expose herself to any danger to preserve her progeny.

The eggs of this species closely resemble those of the common Redleg (*C. rufa*) both in size and coloration; but, judging from six specimens in my collection from Algeria, they are a trifle more richly marked with rufous than the general run of eggs of *C. rufa*. Mr. Salvin says that it deposits its eggs early in April, and that from eleven to fifteen is the usual complement.

The flesh of this Partridge is said to be much less palatable than that of the common Redleg and the Greek Partridge; but I have not personally been able to judge of this.

The specimen described, and figured on the same Plate with the Red-legged Partridge, is an adult male from Sardinia, sent to me by Count Salvadori.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Sardinia, January 1869 (*Salvadori*). *c*, ♂. Algeria, autumn, 1862 (*C. A. Wright*). *d*, ♀. Barbary, February 1863 (*C. A. Wright*). *e*, ♂. Teneriffe, April 21st, 1871 (*F. D. Godman*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. Tangier. *c*, ♀. Melilla, Morocco, October 8th, 1872.

*E Mus. Salvin and Godman.*

*a*, ♂. Teneriffe, April 18th, 1871. *b*, ♀. Teneriffe, April 21st, 1871 (*F. D. Godman*).

*E Mus. Lord Lilford.*

*a*, ♂. Gibraltar, September 1870 (*H. L. Irby*). *b*, ♂. Algeria, autumn of 1862 (*C. A. Wright*).

## Genus AMMOPERDIX.

*Caccabis* apud G. R. Gray, Ann. Nat. Hist. 1843, p. 372.
*Perdix* apud Fraser, Proc. Zool. Soc. 1843, p. 70.
*Ammoperdix*, Gould, Birds of Asia, pt. 3 (1851).

This genus contains only two species, *Ammoperdix bonhami* and *Ammoperdix heyi*, which are found in the north-eastern part of the Ethiopian Region and in the western portions of the Oriental and Eastern Palæarctic Regions, the former species occurring also in the extreme south-eastern portion of the Western Palæarctic Region. They frequent the low hills and stony ravines where there is but scanty vegetation, and where the colour of the sand and stones is closely similar to that of their plumage. They are found in coveys, and are said to resemble the Quail in their flight and the mode in which they rise when flushed; and as they rise they usually utter a whistle. Their ordinary note is said to be a double whistle uttered several times in succession; and some authors say that it reminded them of the call of some of the Red-legged Partridges. They make a very slight nest, it being merely a depression in the ground amongst the stones, lined with a few grass-bents and feathers; and their eggs, which are numerous, are uniform stone-isabelline, unmarked.

*Ammoperdix bonhami*, the type of the genus, has the bill moderately short, stout, about as broad as high (or slightly broader than high) at the base, decurved from the nostrils to the point, which is rounded and thin-edged; nostrils basal, lateral, covered above with an exposed horny oblong operculum; no bare space behind the eye; wings rather short, broad, the first and second quills nearly equal and shorter than the fifth, the third and fourth longest; tail short, even, nearly concealed by the coverts; legs moderate, the tarsus anteriorly scutellate, and without any trace of spur behind; toes moderate, the hind toe small; claws compressed, curved, moderately obtuse.



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SEESEE PARTRIDGE

AMMOPERDIX BONHAMI.

# AMMOPERDIX BONHAMI.

(SEESEE PARTRIDGE.)

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*Caccabis bonhami*, G. R. Gray, Ann. Nat. Hist. 1843, p. 372.
*Perdix bonhami*, Fraser, Proc. Zool. Soc. 1843, p. 70.
*Perdix griseogularis*, Brandt, Bull. Acad. St. Pétersb. 1843, p. 278.
*Ammoperdix bonhami* (Gray), Bp. Compt. Rend. xlii. p. 882 (1856).

*Figuræ notabiles.*

Gould, B. of Asia, iii. pl. 4; Des Murs, Icon. Orn. pl. 29.

♂ *ad.* pileo cinereo-cano, versus nucham vinaceo tincto, fronte et striâ superciliari nigris: loris et plumis auricularibus albis: corpore suprà pallidè cinereo-isabellino, saturatè griseo et pallidè fusco transfasciato et punctato: remigibus primariis fuscis, omnibus præter primum extùs pallidè cervino fasciatis: secundariis et scapularibus isabellino-fusco et rufescente isabellino fasciatis et vermiculatis: caudâ castaneâ, versus apicem griseo tinctâ, rectricibus centralibus dorso concoloribus: mento, capitis lateribus et gulâ cinereo-canis: colli lateribus saturatè cinereis albo guttatis: pectore vinaceo: hypochondriis vinaceo-cinereis, plumis nigro et rufescenti marginatis: abdomine griseo-albo pallidè rufescenti tincto: subcaudalibus pallidè rufescentibus: rostro aurantiaco: pedibus saturatè flavis vix viridi tinctis.

♀ *ad.* corpore suprà sicut in mare colorato, sed magis brunneo: pileo et nuchâ dorso concoloribus: capitis lateribus et gulâ cervino-albidis, nigricante griseo fasciatis: mento fere albido: pectore et hypochondriis rufescenti-cervinis, angustè griseo fasciatis: abdomine et subcaudalibus cervino-albidis: rostro aurantiaco-fusco.

*Adult Male* (Euphrates valley, 23rd February). Crown ashy blue-grey, the hinder portion tinged with vinous; forehead and a line extending over and behind the eye black; lores and ear-coverts silky white, the latter rufous posteriorly; upper parts pale isabelline-grey indistinctly barred and freckled with darker grey and isabelline-brownish; primaries dusky brown, all but the first quill barred on the outer web with buffy white; secondaries and scapulars barred and vermiculated with isabelline-brown or rufous-isabelline; tail chestnut-red, becoming greyish towards the tip; central rectrices like the back; chin, sides of the head, and throat blue-grey, sides of the neck dark ashy grey closely spotted with white; breast pale vinous; flanks vinous grey, the feathers margined with black and rich rufous, forming stripes along the sides; abdomen greyish white tinged with pale rufous; under tail-coverts pale rufous; bill orange; feet and legs deep yellow inclining to greenish. Total length about 9·5 inches, culmen 0·62, wing 5·15, tail 2·5, tarsus 1·25.

*Adult Female* (Euphrates valley, 17th February). Differs from the male in lacking the blue-grey, white, and black on the head, and in being browner; crown, nape, and upper parts as in the male, but browner and more variegated with rufous buff; sides of the head and throat buffy white barred with

blackish grey, the chin nearly white; breast and flanks rufous buff, narrowly barred with dark grey; abdomen and under tail-coverts buffy white; beak browner than in the male. In size rather less than the male, culmen 0·6, wing 4·8, tail 2·25, tarsus 1·15.

This beautiful little desert Partridge is one of the Asiatic birds whose range just extends to within the limits of the Western Palæarctic Region; for it is only met with in the extreme south-eastern portion, in the Euphrates valley, where it has lately been discovered by Mr. Danford to be by no means uncommon. It is, however, found throughout Persia, in Northern India, and in Thibet. Mr. C. G. Danford, to whom I am indebted for the loan of his series of specimens from the Euphrates valley, sends me the following notes:—"*Ammoperdix bonhami* is to be found in the valley of the Euphrates, near Biledjik, which point is probably the western limit of its range. Though sometimes local, it is tolerably abundant, and frequents stony mountain-sides and gullies from the level of the river to at least 1500 feet above it. It is most numerous near cultivated ground, often occurring in company with *Caccabis chukar*. Its flight is quick, straight, and short—in fact, very Quail-like; and it utters a very distinctive note on rising. The coveys seen were small, one of seven being the largest; but this was in February, when they had doubtless been thinned by Hawks &c.

"We first met with them near the village of Bal-kys (honey-girl) while wandering through the rocky valleys which probably constituted the necropolis of the ancient city of Zeugma. Here we were startled from archæological dreams by the sudden rise of a covey of Partridges new to our experiences. It was then too late to follow them up; so we returned next day, and, by dint of hard work, managed to bag six brace.

"No bird could be more beautifully adapted to its habitat than this lovely little Partridge, its coloration being the exact reflex of the pearly greys and fawns of the surrounding landscape. The natives call it 'Tchil keklik,' a name which is also applied in other parts of Turkey to the common Grey Partridge (*Perdix cinerea*), which it exactly resembles."

According to Mr. Blanford (E. Persia, ii. p. 274) "the Tihú is found everywhere in Persia, except the forest-region, from the sea-level to at least 7000 feet above the sea in Southern, and not much less in Northern, Persia. They keep much to low hills and stony ravines about the base of hill-ranges. During the spring and summer they are found in pairs and singly; in the winter they are occasionally to be met with in small coveys, but by no means so frequently as *Caccabis*, nor do they collect, as far as my observation extends, in equal numbers. They may usually be seen walking quietly up stony hillsides, not running so swiftly as most Partridges, nor caring much for concealment; indeed when they wish to hide, it is sufficient for them to remain still; for their colour so closely resembles that of the sand and stones around that they are most difficult to detect. When they rise it is much like a Quail, with a rather quick flight, and a whistle uttered as they start. Their ordinary call is a double note repeated several times. They are excellent eating, far superior to the dry *Caccabis*, and only second, if they are second, to the Francolin."

Mr. A. O. Hume writes of this species (Stray Feathers, i. p. 226), "Common in the Salt range and in the hills that divide the Punjab from Afghanistan, and found, but by no means in equal numbers, in those which divide Sindh from Khelat, and again in those which run up the Mekran

coast. In these latter localities I fully expected to meet with the nearly allied *Ammoperdix heyi*, Temm.; but though we shot several birds, they proved to be all *bonhami*." And this gentleman further writes (Nests and Eggs of Ind. B. p. 541):—"This Partridge is very common and tame in the Salt range: a couple of dozen may be seen in a morning's walk; and if people are set to collect them large numbers are brought in. They are most generally seen running on the bare rocks, or perching about the droppings of cattle on the mountain-paths; but at Tobur, some 2000 feet high, the rainy-season residence of the miners, who during the rest of the year reside in the Khewra Gorge (some 700 feet above the sea), and work the neighbouring Mayo salt-mines, I saw several pairs running about on the flat roofs of the empty houses. The males may often be seen perched on some rocky point; and the female in the spring, though less commonly seen in exposed positions, will always be found close to her mate. They run very rapidly and glidingly over the rockiest ground, rise pretty readily, and fly smartly, always, if possible, down hill. Both in gait and flight they remind one much of the Chukar."

Dr. Jerdon states (B. of India, ii. p. 568), this "bird is only found in the Punjab, in the Salt range of hills, more abundant across the Indus, on the Suleiman range, near Attock, and in the Khyber and Bolan passes; and it is still more common in Afghanistan and Persia, whence the original specimens were sent. It is there called 'Tee-hoo.' Gould states that it was also brought from Thibet by Lord Gifford. Adams says that it is not found further south than the Salt range; but a writer in the 'Bengal Sporting Review,' on the game of Sindh, distinctly indicates it under the name of the Rock or Barbary Partridge as found across the Indus. It frequents rocky ground with brushwood here and there, and is often seen in company with the Chukar, which it much resembles in habits; is found in coveys, which, when sprung, rise with a startling noise, and feeds much on a kind of wild thyme. The flesh is said to be delicious. The name 'Seesee' is given from its call. Theobald found the eggs, twelve in number, of a clear cream-colour, laid in a slight hollow among stones in the hills."

Beyond the notes above given, I find but little on record respecting the habits of *Ammoperdix bonhami*. It breeds in most of the localities where it is found; and its eggs are said to resemble those of its ally, *Ammoperdix heyi*. Captain Cock, who found it nesting in the Salt range, informed Mr. Hume (*l. c.*) that the nest is placed under a ledge of rock or between some stones. He once found one under a cairn of stones that had been erected by the herdboys. "They lay," he says, "from eight to twelve eggs, stone cream-colour, pointed at both ends, in shape and size resembling the eggs of *Podiceps philippensis*. The nest scarcely deserves the name; a few dry bents, one or two feathers, and a hole in the ground is all the nest they prepare for the reception of their eggs."

Mr. Hume gives the size of the eggs of this bird as follows—length from 1·3 to 1·5, breadth 1·0 to 1·1, the average of twenty being 1·4 by 1·03.

The specimens figured are an adult male and female from the Euphrates valley, both of which are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Euphrates valley, February 1879 (*C. G. Danford*). *c*, ♂, *d*, ♀. Murdan, February 1871.

*E Mus. C. G. Danford.*

*a*, *b*, *c*, ♂, *d*, *e*, ♀. Biridjik, Euphrates valley, February 17th, 1879. *f*, *g*, *h*, ♂, *i*, ♀. Roum Kaleeh, Euphrates valley, February 20th, 21st, and 22nd, 1879 (*C. G. D.*).

## Genus FRANCOLINUS.

*Perdix* apud Brisson, Orn. i. p. 245 (1760).
*Tetrao* apud Linnæus, Syst. Nat. i. p. 275 (1766).
*Francolinus*, Stephens in Shaw's Gen. Zool. xi. p. 319 (1819).
*Attagen* apud Keyserling & Blasius, Wirbelth. Eur. p. 65 (1840).
*Chætopus* apud Swainson, fide Degland & Gerbe, Orn. Eur. ii. p. 59 (1867).

This genus includes a considerable number of species, chiefly richly coloured, as far as the males are concerned, which inhabit the Ethiopian, Palæarctic, and Oriental Regions, only one species being found in the Western Palæarctic Region.

They have much in common, as regards habits, with the common Partridge. They frequent dry rush-beds near water, plains where there is plenty of shelter in the way of scrub, and sandy dry localities. They rise with a quick whirring flight, and fly direct and tolerably swiftly, but are as easy to hit on the wing as a Quail. They feed on seeds, shoots, and insects, which they pick up from the ground; and, unlike the Pheasants and Red-legged Partridges, they never perch on trees. They walk and run with ease, and, like the Red-legged Partridges, will often run for some distance in preference to seeking safety in flight. They make their nests on the ground, merely scratching a hole in the soil in some well-covered place, which they line with a few grass-bents, and deposit numerous eggs, which are of a peculiar buffy-brown colour and have a few small white shell-markings scattered over the surface.

*Francolinus vulgaris*, the type of the genus, has the bill rather long, the culmen at the base dividing the frontal plumes, gradually decurved to the point, which is narrow and rounded and considerably overlaps the lower mandible; nostrils lateral, basal, placed in the lower anterior part of the nasal depression, and covered by a hard rounded scale; wings moderate, broad and rounded, the first quill shorter than the sixth, the fourth and fifth longest, the secondaries as long as the primaries; tail short, slightly rounded, nearly concealed by the coverts; legs strong, tarsus rather long and stout, anteriorly scutellate, armed in the male with a tubercle behind; hind toe short, anterior toes moderate, united at the base by a membrane; claws moderate, slightly curved, moderately sharp.



FRANCOLIN.

FRANCOLINUS VULGARIS

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# FRANCOLINUS VULGARIS.

(FRANCOLIN.)

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*The Francolin*, Edw. Glean. Nat. Hist. v. p. 75, pl. 246 (1758).
*Perdix francolinus*, Briss. Orn. i. p. 245, pl. xxiii. fig. 2 (1760).
*Tetrao francolinus*, Linn. Syst. Nat. i. p. 275 (1766).
*Francolinus vulgaris*, Steph. in Shaw's Gen. Zool. xi. p. 319 (1819).
*Perdix hepburniæ*, Gray, Ill. Ind. Zool. pl. 55 (1832).
*Attagen francolinus* (L.), Keys. & Blas. Wirbelth. Eur. p. 65 (1840).
*Francolinus tristriatus*, Bp. Compt. Rend. xlii. pp. 882, 953 (1856).
*Francolinus asiæ*, Bp. ut suprà (1856).
*Francolinus henrici*, Bp. ut suprà (1856).
*Chætopus francolinus*, Swains. (ubi?) fide Degl. & Gerbe, Orn. Eur. ii. p. 59 (1867).

*Francolino*, Italian; *Turatz*, Turkish.

*Figuræ notabiles.*

Edwards, Gleanings, pl. 246; D'Aubenton, Pl. Enl. 147, 148; Werner, Atlas, *Gallinacés*, pl. 11; Gould, B. of Eur. pl. 259.

♂ *ad.* pileo et nuchâ fuscis, centraliter nigricantibus: pilei postici lateribus et nuchâ imâ albo notatis: torque collari ferrugineo-castaneo: collo imo postico nigro, albo notato: dorso, scapularibus et tectricibus alarum nigro-fuscis, ochraceo et ochraceo-albo notatis: remigibus nigro-fuscis, rufescenti-ochraceo fasciatis: uropygio et supracaudalibus nigris, albo fasciatis: caudâ nigrâ, versus apicem immaculatâ et alibi albo fasciatâ: capitis lateribus, gulâ, gutture et pectore nigris: plagâ magnâ suboculari albâ: abdomine rufescente, albido notato et fasciato: hypochondriis nigris, conspicuè albo guttatis: subcaudalibus castaneis, albo apicatis: rostro nigro: iride brunneâ: pedibus rufescenti-aurantiacis.

♀ *ad.* pileo, nuchâ et corpore suprà sordidioribus, torque collari nullâ, sed collo postico rufescenti-castaneo: uropygio et supracaudalibus saturatè fuscis, pallidè brunneo vermiculatis et marmoratis et albido fasciatis: caudâ ut in mare, sed vix fusco marmoratâ: capitis lateribus albidis, nigricanti notatis: striâ superciliari albidâ: mento et gulâ superiore albis, corpore reliquo subtùs albo ochraceo lavato et conspicuè nigricanti fasciato et notato: subcaudalibus castaneis, versus apicem pallidè brunneo et nigro notatis.

*Adult Male* (Meander valley, Anatolia, February). Crown and nape wood-brown, the feathers having blackish centres, which are largest on the forehead; sides of the hind crown and lower nape marked with white; a broad collar round the neck rich chestnut-red; hind neck below this black, spotted with white; back, scapulars, and wing-coverts blackish brown, varied with bright ochreous and whitish ochreous; quills blackish brown, broadly barred with rufescent ochreous; rump and upper tail-coverts black, narrowly and distinctly barred with white; tail black, more broadly barred, except towards the tip, with white; sides of the head black with a long white patch below and behind the eye; chin,

throat, except where crossed by the chestnut collar, and breast deep black; flanks black, very boldly spotted with white; abdomen rufous, varied and barred with dull white; under tail-coverts rich chestnut-red, tipped with white; bill black; iris hazel-brown; legs dull reddish orange. Total length about 14 inches, culmen 1·0, wing 6·9, tail 4·1, tarsus 2·2.

*Adult Female* (Arpasa valley, Anatolia, January). Crown, nape, and upper parts generally much duller than in the male; the hind neck is chestnut-red, but this colour is not continued round the neck; rump and upper tail-coverts dark brown, irregularly vermiculated or marbled with light brown, and barred with brownish white; tail as in the male, but rather more irregularly barred, and slightly marbled with brown; sides of the head white, marked with blackish; a broad streak over the eye dull white; chin and upper throat pure white; rest of the underparts white, washed with ochreous, and broadly barred or blotched with blackish; under tail-coverts chestnut-red, marked with pale brown, and black towards the tip. Culmen 0·95, wing 6·8, tail 4·0, tarsus 2·0.

*Obs.* I cannot find any difference in specimens from India and Asia Minor, except in size, the former being rather smaller than the latter; but the single example in Lord Lilford's collection from Sicily is unusually small, even much less than Indian specimens. The average measurements of adult males are as follows, viz.:—from Anatolia, wing 6·9, tail 4·0, tarsus 2·15; from Sindh, wing 6·2, tail 4·0, tarsus 2·1; and from Sicily, wing 5·4, tail 3·55, tarsus 1·8.

The Francolin inhabits Asia Minor, Palestine, the island of Cyprus, ranging eastward into India. Now no longer found anywhere in Europe proper, except in the island of Cyprus, where it is common, it appears still to be very generally distributed in Asia Minor, where, Dr. Krüper says, it is resident, and is not uncommon in the swampy portions in the southern districts. It never occurs in the immediate vicinity of Smyrna, but is met with at Scala Nova, near Old Ephesus. Mr. C. G. Danford informs me, "it appears to be fast disappearing in Asia Minor. In Smyrna it used to be found in the marshes of the Hermus, and in the neighbourhood of Ephesus, but is now, I believe, extinct in both these localities. We first met with it (January 1874) in the rushy tracts on the banks of the Arpasa, a tributary of the Meander. There it was by no means common. And higher up the country, in the extensive marshes near the ruins of Hierapolis, where it is said to have been formerly abundant, it now seems no longer to exist. At the mouth of the Meander, near the village of Domahtea, we again found Francolins, and killed, by dint of a good deal of work among the rushes and oleander bushes, about ten brace. On the sea-coast plains, more to the south-east, it is not so scarce, being tolerably common near Adalia, and reported still more plentiful in other districts." It is found in Palestine, and is, Canon Tristram writes (Ibis, 1868, p. 212), "very abundant on the plain of Gennesaret, where the coveys conceal themselves among the thickets of jujubes, especially near water. We also frequently heard and sometimes saw it on the plains of Acre and Huleh, and on the lower grounds of Esdraelon, near the Jordan. But it never voluntarily leaves its cover. Its flight is heavy, rather like that of a Grouse; and it is perhaps the easiest of all game-birds to shoot on the wing. There were seldom more than three or four together; but I have frequently found half a dozen parties within call of each other. The cock bird begins to call from the middle of a grass-field at the early dawn; and the cry is taken up and answered on all sides in an instant. It is a very peculiar note, never forgotten when once heard, something like *chuck*, *chuck*, *tee-*

*tee-tor*. The nest is very difficult to find, and I never succeeded in discovering it myself; but some of our Arabs once brought in a sitting of eggs, all of which they succeeded in smashing as they carried them in their cloaks." Eastward the Francolin is found in Armenia and Persia. Mr. Blanford informs me that he only met with the Francolin in the better-wooded parts of Baluchistan, up to an elevation of about 2000 feet, and on the banks of the Shat-el-Arab, near Bussorah; but he believes that it occurs in places all along the coast of Southern Persia. To this Major St. John adds that "it is found in the warm plains of Southern Persia, and the damp forest regions of the Caspian, but not very abundantly in the latter. The northern limit is about Lenkoran. West of our region it is found in great numbers in the tamarisk-jungles and reed-beds of Mesopotamia." Mr. A. O. Hume states (Stray Feathers, i. p. 226) that "in suitable localities throughout Sindh, wherever there is water and long grass, the present species abounds. About Kusmore, on the bank of the Indus, they swarm, and on the road between Shikarpore and Sukkur they run backwards and forwards across the road in front of you as our Pheasants do in Norfolk." According to Dr. Jerdon it is found throughout the whole of Northern India, from the Himalayas to the valley of the Ganges, but does not, that I am aware of, extend to any distance beyond the valley of the Ganges, until above Allahabad, beyond which it passes to the Punjab, and southwards through Rajpootana to Sindh and perhaps to Goozrat. Eastward it extends through Dacca to Assam, Sylhet, and Tipperah; but I have seen no record of its occurrence further south in this direction, and it is replaced in Burmah by an allied species. It occurs south of the Ganges, between that river and the Hooghly; and I have seen notices of the Black Partridge having been shot in Midnapore and Cuttack; but it is certainly rare south of the Ganges." Mr. Blyth states, on the authority of Captain Beavan, that it is tolerably common in Maunbhoom, where *Francolinus pictus* is not met with; and Dr. Leith Adams says that it is common in cultivated localities in the lesser ranges, but is never found in the valley of Cashmere or Ladak.

There appears no doubt that the present species formerly existed in Spain, Sardinia, Sicily, and the Greek archipelago; but it is now quite extinct in those localities, and, as above stated, the only portions of the Western Palæarctic Region where it occurs are the islands of Cyprus, Asia Minor, and Palestine. Lord Lilford, in an exhaustive article on the present species (Ibis, 1862, pp. 352–356), clearly shows that it was then undoubtedly extinct in every portion of Europe proper, except in Cyprus, and that Dr. Bree had no ground for his statement that when he wrote his first edition it still inhabited various portions of Southern Europe. Messrs. Salvadori and Doderlein have sought to prove that the extinction of the present species in Sicily is of very late date; and the latter refers to one having been eaten at a dinner at Terranova in 1869; but no recently killed example, or even feathers of one, sufficient for identification, have been forthcoming, in spite of a heavy reward offered for a specimen; and it may therefore be reasonably doubted whether the occurrences recorded really referred to the present species. I need not, however, reproduce the mass of information collected by his Lordship in confirmation of his statement, but may remark that he appears to disbelieve that it ever occurred in Malta, though this island is named by Temminck and Schlegel as one of the localities where it used formerly to be met with. He adds, however, one locality which appears to have been previously omitted, viz. Spain, and writes (*tom. cit.* p. 354) as follows:—"It is remarkable that neither

Temminck, Degland, nor Schlegel should cite Spain as a locality for our bird, as, though now extinct in that country, it was formerly common in certain favourable localities, especially the neighbourhood of the Lake of Albufera, near Valencia: *vide* 'Catalogo de las Aves de la Albufera,' by Vidal, who, referring to the work published by Escolano, on the fauna of the Province of Valencia, in 1722, says that the Francolin,—'Muy abundante en la Dehesa en tiempo de aquel escritor, no se encuentra ya en semejante localidad.' I saw specimens from the above-mentioned 'Dehesa' (a sandy strip of land between the lake of Albufera and the sea) in the Museum at Valencia in 1856, which had been killed many years previously; but during a long day spent wandering about the Albufera, gun in hand, and after inquiries amongst the fishermen and cazadores of the place, I could only discover that, to use a Spanish proverb, the Francolins were 'idos y muertos y no tienen amigos.' Olina, to whom I have before referred, mentions the abundance of Francolins in Spain in his time, and tells us that they particularly affected plains overgrown with 'ramerino e spigo.' I have been assured that Francolins were common many years ago near Tangier."

Lord Lilford further remarks that Olina mentioned it as being especially abundant in the neighbourhood of Tunis; and a gentleman he met at Marseilles assured him that he had once, and only once, met with and shot a pair near Philippeville, in Algeria; and I am indebted to him for the following notes:—"Since writing my paper on the extinction of this species in Europe (Ibis, 1862, p. 352), and my controversy with Dr. Bree as to whether Cyprus could legitimately be termed Europe, I have visited that island with the especial object of seeing the Francolin in his native haunts, and as far as possible becoming personally acquainted with his habits and economy. Before going into details on the subject I may as well say that the main facts in my paper above mentioned are perfectly correct, with the exception of the entire extinction of the bird in Sicily, as proved by Mr. Howard Saunders, and admitted by me in my account of the cruise of the 'Zara' in 'The Ibis;' however, I think, at all events, that for all practical purposes we may now consider the species extinct in Europe in the usual acceptation of the term, though I am glad to say it is not only to be found, but is abundant, in localities which come well within the limits indicated upon your wrappers. In the island of Cyprus the bird is by no means scarce, though at the time of our visit (April and May) they were paired and nesting, and comparatively difficult to find. I was (I do not know why) always under the impression that the Francolin almost always affects the vicinity of water; but I was speedily undeceived on this subject. There are many localities in Cyprus in which the bird was formerly common, where it is now no longer to be found, without any apparent cause for its disappearance; this applies particularly to the immediate outskirts of the town of Larnaka, where I am assured that twenty years ago several brace might be shot in two or three hours, but where at present not a Francolin is to be found.

"Owing to the scarcity of good harbours in Cyprus, and the consequent danger of leaving my vessel for any length of time, I was unable to explore the island so thoroughly as I wished; and I know well that there are many localities in which the Francolin is common, and which I could not visit on that account. We first met with the bird amongst the sandhills which skirt the sea-shore a few miles to the north of the town of Famagousta and the ruins of Salamis; and thence to the eastward, in the promontory known as the Horn of Cyprus, we found the species

tolerably abundant. The country in this part of the island is partially cultivated with wheat, cotton, barley, and other cereals. We generally found the Francolin in the immediate vicinity of cultivated ground, though never, as far as I recollect, actually in the corn. The uncultivated portions of the country are covered with a dense scrub of lentiscus and a species of juniper, which in some places attains a considerable height, and is very difficult to penetrate for man or dog. We were generally guided by the cry of the male bird, which is very peculiar, consisting of three bell-like notes which are audible at a very great distance. By the action of our dogs I am inclined to think that the bird runs off immediately on being approached for a short distance, and then ensconces itself in the thickest low-growing lentiscus it can find, and will not rise until almost trodden on. In our experience the male bird invariably rose first, springing straight up into the air with a chuckling note and a whirring of the wings resembling that of the common Pheasant. The hen would generally rise at the shot; in fact I hardly recollect an instance in which we flushed the male without finding the female. I had the good fortune to find a nest containing eleven eggs, which proved to be much incubated. This was on the 24th of April, 1875; the nest was placed on the ground in the centre of a dense low-growing lentiscus, and consisted of merely a few dried grasses. The eggs were very unmistakable.

"I observe that Dr. Bree, in his second edition of the 'Birds of Europe' (iv. p. 143), quoting from Sig. Benoit's work, says that the Francolin makes its nest under *birches* and other bushes. This strikes me as an extraordinary statement, as, though I am no botanist, I can hardly conceive the existence of the birch in any locality inhabited by the Francolin.

"We also met with the Francolin in Cyprus, in the neighbourhood of Baffo, the ancient Paphos, and often heard it near Limasol, though in this locality we could never induce it to rise. We found nothing in the crops of these birds but the remains of coleopterous insects and a few minute seeds. I was assured that within the last twenty years this species was exceedingly common on the island of Rhodes, where it is now entirely extinct. We often heard the cry of the Francolin after dark at night. From my own observation I can fully confirm Sig. Benoit's statement as to the present species not perching, as it is stated to do by several authors."

I am indebted to Mr. C. G. Danford for the following notes on the habits of this species:—"Francolins appear to prefer dry rush-beds near water; but where such cover is not to be had they will frequent ground where there is plenty of bush and myrtle scrub, and may often be found at a considerable distance from water, but, according to my experience, invariably on the plains. We always saw more hens than cocks; but that may arise from the former not being quite such runners as the latter. They are both difficult enough to flush, and especially so in dull weather, when it was often the work of hours to get them up from the rush cover, although sharply pushed by the dogs all the time. When they do take to the wing it is with a quick whirring flight, which generally begins with a short perpendicular rise, and is afterwards straight, level, and not long sustained. They are about as easy to shoot as a Quail of the same size would be; even a Turk with his long gun can hit them flying, a circumstance much against their chances of multiplying. The flesh is delicate and good, but has not a strong game flavour. The weights of a full-grown male and female were $1\frac{1}{4}$ lb. and 1 lb. respectively. The crops of those which I examined contained various insects, barley-seeds, and green vegetable substances."

I am indebted to the liberality of Lord Lilford for two eggs of the Francolin, obtained by

himself in Cyprus. They are warm buffy brown in colour, very much browner than any eggs of the common Partridge I have seen, and have peculiar and very characteristic small white shell-blotches scattered over the surface. In size they measure $1\frac{26}{40}$ by $1\frac{11}{40}$ and $1\frac{24}{40}$ by $1\frac{12}{40}$ inch respectively.

The specimens figured are an adult male and female from Anatolia, presented to me by Mr. C. G. Danford, and are those above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀, Arpasa valley, Anatolia, January 1874 (*C. G. Danford*). *c*, ♂. Meander valley, Anatolia, February 1874 (*C. G. D.*). *d*. Bussorah, December 16th, 1871 (*W. T. Blanford*). *e*. Near Sakhar, Upper Sindh, March 23rd, 1875 (*W. T. B.*).

*E Mus. Lord Lilford.*

*a*, ♂ *ad.* Sicily. *b*, *c*, ♂ *ad.* Near Trikporno, Cyprus, April 24th, 1875. *d*, ♂. Near Ghalinopori, April 26th, 1875. *e*, ♀. Livadhia, April 23rd, 1875. *f*, *g*, ♂, *h*, ♀. Near Rhizokarpaso, Cyprus, April 29th, 1875. *i*, ♂. Moulia, Cyprus, May 12th, 1875 (*Lilford*).

*E Mus. Howard Saunders.*

*a*, ♂. N. India (*Marshall*). *b*, *c*, ♀, *d*, *e*, *f*, ♂. Kurrachee, Sindh (*W. B. Muloch*).

## Genus PERDIX.

*Perdix*, Brisson, Orn. i. p. 219 (1760).
*Tetrao* apud Linnæus, Syst. Nat. i. p. 276 (1766).
*Starna* apud Bonaparte, Comp. List, p. 43 (1838).

The true Partridges are restricted to the Palæarctic Region, only one species being found as a resident in the western division of that region.

They are amongst the best-known and most valued of our game-birds, and are found in cultivated ground and open localities where there is scrub or other cover. They walk with ease, consort together in coveys, and when flushed rise with a whirring sound. Their flight is swift, direct, and strong; and they will sometimes traverse considerable distances, though they generally prefer to drop into the nearest available cover. They feed on seeds, shoots, insects, &c., which they pick up on the ground. They never perch, like their Red-legged allies, on trees, but, like them, are fond of dusting and sunning themselves in warm, sandy places. They nest on the ground, their nest being a depression scratched in the soil and lined with grass &c., and deposit numerous pale olivaceous-brown eggs. The young when hatched are able to run about, and to pick up food for themselves, but are for some time carefully tended by their parents.

*Perdix cinerea*, the type of the genus, has the bill short, stout, depressed towards the tip, which is rounded and sharp-edged; nostrils basal, lateral, operculate, linear in front, circular behind, the nasal groove broad and feathered; a small space behind the eye bare; wings short, broad, curved, the first quill shorter than the sixth, the third longest; tail short, rounded; legs strong, rather short, the tarsus anteriorly scutellate, the males having usually a knob behind; toes stout, the hind toe small, elevated, the anterior ones webbed at the base; claws moderate, curved, with convex ridge, rather obtuse.



E Neale lith.

Hanhart imp.

PARTRIDGE.
PERDIX CINEREA.



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E.Neale lith.

Hanhart imp

PARTRIDGE.
FEMALE & YOUNG.

# PERDIX CINEREA.

(PARTRIDGE.)

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*Perdix cinerea*, Briss. Orn. i. p. 219 (1760).
*Perdix cinereo-alba*, Briss. Orn. i. p. 223 (1760).
*Perdix damascena*, Briss. Orn. i. p. 223 (1760).
*Perdix montana*, Briss. Orn. i. p. 224 (1760).
*Tetrao perdix*, Linn. Syst. Nat. i. p. 276 (1766).
*Perdrix grise*, Buff. Hist. Nat. Ois. ii. p. 401 (1771).
*Perdrix grise-blanche*, Buff. tom. cit. p. 415 (1771).
*Petite Perdrix grise*, Buff. tom. cit. p. 417 (1771).
*Perdrix de montagne*, Buff. tom. cit. p. 419 (1771).
*Tetrao damascenus*, Gmel. Syst. Nat. i. p. 758 (1788, ex Briss.).
*Tetrao montanus*, Gmel. ut suprà (1788, ex Briss.).
*Perdix cinerea*, Lath. Ind. Orn. ii. p. 645 (1790, ex Briss.).
*Perdix damascena* (Gm.), Lath. tom. cit. p. 646 (1790).
*Perdix montana* (Gm.), Lath. ut suprà (1790).
*Perdix vulgaris*, Leach, Syst. Cat. B. & M. Brit. Mus. (1815).
*Perdix cineracea*, C. L. Brehm, Vög. Deutschl. p. 525 (1831).
*Starna cinerea* (Lath.), Bp. Comp. List, p. 43 (1838).
*Perdix sylvestris*, C. L. Brehm, Vogelfang, p. 267 (1855).
*Perdix minor*, C. L. Brehm, ut suprà (1855).
*Starna perdix* (L.), Bp. Cat. Parzud. p. 13 (1856).

*Perdrix grise*, French; *Starna*, Italian; *Rebhuhn*, *Feldhuhn*, German; *Patrijs*, *Veldhoen*, Dutch; *Almindelig Agerhöne*, Danish; *Raphöne*, Norwegian; *Åkerhöna*, Swedish; *Turkinpyy*, *Peltopyy*, Finnish; *Kouropatka*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 27, 136; Werner, Atlas, *Gallinacés*, pl. 15; Kjærb. Orn. Dan. taf. 28*c*; Frisch, Vög. Deutschl. taf. 113, 114, 114 B, 115; Fritsch, Vög. Eur. taf. 30. fig. 9; Naumann, Vög. Deutschl. taf. 163; Sundevall, Svensk. Fogl. pl. 31. fig. 5; Gould, B. of Eur. pl. 262; id. B. of G. Brit. iv. p. 13; Schlegel, Vog. Nederl. pl. 179; Bettoni, Ucc. Lomb. i. pl. 8.

♂ *ad.* pileo, nuchâ et regione auriculari fuscis: fronte, striâ suprâ oculos et gulâ rufis: collo postico et corpore suprà fusco-cinereis, rufescente fusco et saturatè fusco tenuissimè undulatis: tectricibus alarum castaneo notatis, et plumis striâ ochraceo-cervinâ centraliter notatis: remigibus fuscis ochraceo-fusco fasciatis: uropygio et supracaudalibus castaneo transfasciatis: rectricibus centralibus ad basin castaneis, versus apicem cervino-rufis, fusco vermiculatis, reliquis castaneis: gutture et pectore cinereis

nigricanti tenuissimè undulatis: pectore imo maculâ saturatè castaneâ formam ferri equini referente notato: hypochondriis pectori similibus sed sordidioribus et castaneo fasciatis: abdomine imo et tibiis cinereo-albis: subcaudalibus ochraceo-cervinis saturatè cinereo vermiculatis: pedibus cinereis, rostro cinereo-albo: iride fuscâ.

♀ *ad.* mari similis sed minor, corpore suprà saturatiore, pileo ochraceo-fusco guttato, areâ rufâ in gulâ minore et hypochondriis magis transfasciatis.

*Adult Male* (England, 1st February). Crown, nape, and ear-coverts warm brown; forehead, a broad stripe over the eye, sides of the head, chin, and upper throat orange-chestnut; behind the eye is a small naked patch of red skin; hind neck and back brownish grey, vermiculated with reddish brown and dark brown; wing-coverts similar, but marked with chestnut, and each feather with a central ochreous-buff shaft-stripe; primaries brown, barred with ochreous brown; rump and upper tail-coverts like the back, but banded with chestnut; central rectrices chestnut-red at the base, becoming buffy red, vermiculated with brown towards the tip; rest of the tail uniform chestnut-red; lower throat and breast light blue-grey, finely vermiculated with dark grey; lower breast with a rich, dark chestnut horseshoe-shaped patch; flanks duller than the breast, and barred with chestnut; lower abdomen and thighs greyish white; under tail-coverts yellowish buff, finely vermiculated with dark greyish; legs and feet dull brownish grey, with a bluish tinge; bill bluish white; iris hazel-brown. Total length about 12·5 inches, culmen 0·75, wing 6·1, tail 3·95, tarsus 1·75.

*Adult Female* (England). Rather smaller than the male; upper parts darker and browner, and more marked with brown and buff; the light chestnut on the throat covers a smaller area; the chestnut patch on the breast is small, not being assumed before the second or third year; and the bars on the flanks are broader.

*Young in first autumn* (Aboyne). Upper parts as in the female, but duller, and more variegated with brown; neck spotted with ochreous; no chestnut patch on the breast, this part being dull whitish.

*Young in down.* Upper parts yellowish rust-brown, marked with reddish and blackish brown; crown marked with a couple of dark stripes; and the markings form also stripes on the sides of the back; throat and underparts yellowish white on the flanks, washed with rusty yellow; bill and feet yellowish flesh-coloured.

The Common or Grey Partridge is generally distributed throughout temperate Europe, becoming rarer in the south; and it does not range into North Africa. In Asia it does not extend very far from the confines of Europe, and is replaced in Eastern Asia by *Perdix barbata*.

Throughout Great Britain the Partridge is very generally distributed, being, however, much less common in uncultivated localities; and it is rather less numerous in the north of Scotland than it is in the lowlands and in England. All through England it is very common; but its numbers vary considerably according to the state of the weather during the breeding-season, and it is more numerous in some counties than in others according as the soil is favourable or not. Mr. Cecil Smith informs me that it has been introduced and has bred in the little island of Herm, near Guernsey; but, unless closely preserved, it will soon become extinct there again. In Norfolk and the eastern counties it has to contend for existence with the Red-legged Partridge, which would probably oust the present species in the struggle for existence were it not kept down as much as possible. In Northumberland and Durham, Mr. Hancock says (B. of North. &

Durh. p. 91), it is plentiful, but the stock is liable to great fluctuation in accordance with the state of the weather: in 1870 and 1871 the supply was unusually abundant; but in 1872 there was a great decrease in the number, apparently owing to the large rainfall of that year.

In Scotland, Mr. Robert Gray writes (B. of W. of Scotl. p. 241), it is "plentiful throughout all the cultivated tracts, extending from the Mull of Galloway—where several broods are found annually on a patch of enclosed ground belonging to the Lighthouse Commissioners, and overlooking the highest cliffs—to Cape Wrath. On the mainland it seems to have followed naturally upon the reclamation of waste land and the introduction of husbandry; but it does not appear to have ventured beyond the circle of the Inner Hebrides, where it is probably confined to three islands, viz. Islay, Mull, and Skye." According to Messrs. Baikie and Heddle it has of late years been successfully introduced into the islands of Rousay and Shapinshay, in Orkney.

It is found in Ireland, as in England and Scotland, chiefly on cultivated soil, but only in moderate numbers; and Thompson states that it has never prevailed to the extent that it has in many parts of England and Scotland.

Neither in Greenland nor Iceland, nor yet in the Færoes does the Partridge ever appear to have occurred; but it is tolerably common in some parts of Scandinavia. Mr. Robert Collett informs me that it is said to have first migrated to Norway in 1744 from Bohuslän, in Sweden; but though this is the first recorded occurrence, it is very possible that some arrived from there long previously to that. In that year (1744) a covey penetrated as far as Christiania; and within the next year or two these birds penetrated further; but before the beginning of the next century they appeared to have vanished. About 1811 another migration took place in about the same district; and they then spread over a large portion of Southern Norway. As a rule, however, the Partridge is only found in small numbers in that country; for it runs the risk of being exterminated every winter, either by the cold or by the birds of prey, especially the Hooded Crow and Goshawk, both of which commit great ravages amongst them in the winter season, the Goshawk remaining near a covey until it has killed every bird.

In his Notes on the Ornithology of Norway, Mr. Collett says:—"This species, which in the autumn of 1862 was even abundant in the lower south-eastern districts, disappeared almost entirely the ensuing winter, and has since then occurred in small numbers only here and there in the south-eastern lowlands. In some localities, Fredrikshald for instance, the general opinion is that *Astur palumbarius* destroys more birds of this species than are killed off by the winter cold, their numbers being kept up only by immigration from Bohuslän. Attempts to acclimatize this bird have been made in the neighbourhood of Stavanger and Trondhjem, to which localities the species can hardly have penetrated of itself. Near the latter town thirty brace were turned out into the fields (I believe in 1860), and at first appeared to thrive pretty well. In the autumn of 1862 individuals were observed as far north as Levanger, near which town a large covey, flying in a northerly direction, was seen on the 15th November. Although their numbers must have been thinned very considerably by the rigorous winter of 1862, some appear to have survived, coveys having been observed in 1865 and 1866 in Indherred (64°), in 1867 in Börsen, in 1872 in Örkedalen and Stod, districts situated on the northern and southern shores of the fjord. Seven individuals, procured from Spain, were turned out in the neighbourhood of Stavanger in 1862. The following year a brace was observed; but nothing more has been seen of them. On the

Rosendal estate, in Hardanger, a similar attempt was made, and with the same result. As regards the distribution of this species in a vertical direction, it may be observed that a covey of eight or ten birds was seen in the autumn of 1860 at Nystuen, on the Fillefjeld, at an altitude of 3200 feet above the sea."

It is said that the Partridge was introduced into Sweden about the year 1500; but Sundevall doubts this, and believes that it must have occurred there previously to that. It is found throughout that country in suitable localities up to the plains of Upland, and possibly to Gefle, and in the lowlands to 60° N. lat.; but in favourable seasons it ranges further north, and increases until a severe winter again destroys them. It has been seen in numbers in Helsingland and the southern portion of Dalecarlia; and small coveys have appeared in the Herjedale, and in Svegs parish in 62° N. lat. Stragglers have also been seen in Upper Medelpad, and even in Norrbotten. I am indebted to Dr. Sundström for the following notes respecting the range of the Partridge in Sweden, viz.:—"Of late the Partridge has penetrated much further north than when Nilsson, in the third edition of his work on the birds of Scandinavia, gave Helsingland as the northern boundary of its range. Since then it has penetrated into Ångermanland, whence several are sent every year to Stockholm in the sledge-loads of game. The game-dealers there at first looked on it as an almost valueless small bird. Even further north it has been seen; for it was obtained at the Gylgen iron-works in Öfver-Kalix parish (in 66° 15′ N. lat.), and a covey of about a dozen is said to have remained there during the winter of 1862–63, resorting to the garden of the works, where they were regularly fed. There is no reason to believe that they were turned out there; they probably came from Ångermanland. In many parts of Jemtland the Partridge is now by no means rare. In 1845 a covey is said to have resorted to a rye-field near Hammardal church, about six Swedish miles north-west of Östersund; and in 1860 notice was taken of some strange birds which were caught in the Ptarmigan-snares, and which were supposed to be a variety of the Hazel Grouse, or hybrids, but which proved to be Partridges. Since then it has become commoner and better known in Jemtland, and is most numerous about Storsjön and Locknesjön, whence it ranges westward to the fells, to Åreshuta and Kalls parish, about 1700 feet above the sea, whence there is but little arable land, and chiefly forest and bare damp fields. During the last ten years it bred regularly round Storsjön and Locknesjön in spite of a cold winter in 1867–68 followed by a late and severe spring, which is the more remarkable because in Central and Southern Sweden in a severe winter, as in 1860, they get decimated, and even in some places killed out. From this it would appear that neither the severe cold of 1867, when during three weeks the thermometer ranged between 30 and 40 degrees of frost, nor the dense masses of snow cause the great mortality amongst these birds, which must arise from some other cause, probably want of food and ravages caused by birds of prey and men; for during the severe cold these birds are more easily obtained." In Finland, Dr. Palmén writes (Finl. Fogl. ii. p. 49), its range is very irregular; for in some seasons it is found up to 65° N. lat., where it soon disappears during cold winters, and between 1860 and 1870 it nearly disappeared, but in 1871 it began to increase again. Dr. Palmén gives numerous instances of its occurrence throughout the country up to Uleåborg, where it has been seen in tolerable numbers, but has since disappeared, and one only was seen in the early part of the winter of 1871. Of late years it has also disappeared from Sotkamo, where it formerly occurred, as also in Kajana, and up to Hyrynsalmi

(in 65° N. lat.). The Rev. J. Fellman also says that it has been seen and captured in Kuusamo (in 66° N. lat.); but north of that it does not appear to have been met with. When in Finland, many years ago, I frequently saw it near Wyburg, where it did not appear to be rare.

In Russia it ranges tolerably far north. Meves says that he was informed that it occurs in Wuitegra; and according to Kessler it has only lately spread into the Olonetz Government. Mr. Sabanäeff says that it is gradually, but surely, extending its range northward, and it is now found in the south-western portions of the Vologda Government, in that of Kostroma, and throughout the southern portions of the Viatka and Perm Governments, where, not long previously, it was scarcely known. It breeds in the cultivated portions of the south-eastern and south-western slopes of the Ural, and has of late years reached Tagila. Teplouhoff says that it breeds sparingly on the Obva in 58½° N. lat. Throughout the whole of Poland, Mr. Taczanowski says, it is very common and resident.

In Germany it is resident, and very generally distributed throughout the country, except in the more mountainous districts; and Mr. Jonas Collin says that it is common and resident throughout the whole of Denmark, except Bornholm, but during severe winters it is to some extent migratory. Mr. H. M. Labouchere informs me that it is found throughout Holland, being, however, most numerous on the dunes, which are partially wooded and clothed with brushwood, but it is likewise met with on the moors. In Belgium it is common in the moister and more fertile portions of the country, but rarer in the arid districts; and in France it is very common in the northern and central departments, but rare in the south, where it is replaced by the Red-legged Partridge. In Portugal it is extremely rare. Professor Barboza du Bocage does not include it in his list; but the Rev. A. C. Smith (Ibis, 1868, p. 450) states that a specimen was obtained and sent to the Lisbon Museum just before he visited that town; and in Spain it is, according to Mr. Howard Saunders (Ibis, 1871, p. 223), "almost unknown south of the Sierra Morena and, I might say, south of the Guadarrama range. One specimen is in the Murcia collection." Colonel Irby informs me that it is found in Liebena, in the province of Santander; and Dr. A. E. Brehm states also that it replaces the Red-legged Partridge in Asturia, Leon, Upper Catalonia, and here and there in Arragon. In Savoy it is said to be, to some extent, migratory, and to some extent resident; and it is found throughout Italy, except in the Mediterranean islands. It has been stated to have occurred in Sardinia and Sicily, but apparently without valid reasons. Mr. A. B. Brooke states (Ibis, 1873, p. 335) that a good sportsman assured him that he had shot the common Partridge in the north of Sardinia, but he himself never saw a specimen; and neither Doderlein nor Benoit ever succeeded in obtaining it in Sicily. It appears to be less numerous in Southern Germany than it is in the north; but Dr. A. Fritsch says that as the forests are by degrees cut down and the country becomes more cultivated it increases in Bohemia. He gives the total number of Partridges returned as shot in Bohemia in three years as follows:—in 1857, 301159; in 1863, 536806; and in 1864, 586195 head. The Ritter von Tschusi-Schmidhofen states, in his Notes on the Ornithology of the Riesengebirge, that "Partridges were observed by the gamekeeper at the Tannenstein in 1865, and near St. Peter in 1867; at the latter place several specimens were killed. It occurs only occasionally in autumn." In Transylvania, according to Messrs. Danford and Harvie-Brown (Ibis, 1875, p. 417), it is "generally distributed on the low ground, but is not numerous. Herr Buda Ádám shot one

at Urik Burlea, behind the Retjezát, at an elevation of about 6000 feet. There was a covey; and they had, no doubt, been bred there." It occurs in the countries skirting the Danube; and Messrs. Elwes and Buckley say (Ibis, 1870, p. 328) that it is "by far the commonest game-bird both in Macedonia and Bulgaria. Very good bags are often made on the plains, as soon as the harvest is got in; and even the natives, who at present are armed with flint muskets five feet long, manage to slaughter a good many. Though the Turks, as a nation, care very little about sport, or any thing requiring exertion, yet villagers who are excellent pot-hunters and capital shots are sometimes found." Dr. Krüper states that it is said to occur on the northern frontiers of Greece, but is unknown elsewhere in that country. Colonel Drummond-Hay states that it is common in winter on the plains of Macedonia; and Lord Lilford writes (Ibis, 1860, p. 238):—"It is common in the cultivated plains of Albania proper, in which provinces I have seen and shot it near Antivari. In Epirus it is found in considerable numbers near Joannina, and in the plains of Arta. I have also heard of its occurrence in the neighbourhood of Avlona, about eighty miles north of the island of Corfu."

In Southern Russia it is abundant everywhere throughout the steppes; and with regard to its range in Asia Minor I am indebted to Mr. C. G. Danford for the following notes, viz.:—"As far as my knowledge, derived from experience and hearsay, extends, the present species does not occur on the western shores of Asia Minor, though in Roumelia it is common enough, and plenty are to be seen in the Pera game-shops. Nor have I ever observed it either on the southern coasts or in the varied range of country between Mersina, on the Mediterranean, and Samsoun, on the Black Sea. Still, although *P. cinerea* has not come under my personal notice, I have no hesitation in saying that it not only occurs in Asia Minor but is in some districts of the interior abundant. An English gentleman who has lived for some time in that country informed me that it was not uncommon in the province of Angora; and my friend Mr. Wilkin, H.B.M. Vice-Consul at Adalia, told me that when living at Isbarta, between the great lakes of Ergerdir and Buldur, he found the Grey Partridge almost as common as the Red-leg (*P. chukar*). Mr. Wilkin, as a good sportsman, was not likely to have made any mistake as to species. Again, we have the testimony of M. Tchihatcheff, who says (Asie Mineure, vol. ii. p. 764), 'La perdrix grise et la perdrix rouge sont fort répandues en Asie Mineure, surtout la première, dont mainte fois j'ai été à même d'observer les nombreux essaims qui peuplent les grandes plaines de la Lycaonie et tout particulièrement la région comprise entre Karaman et Karabounar.' This evidence makes our not meeting with this bird rather remarkable, as Karaman does not lie much off the route which we lately traversed; nor is the lake-district far from Deneslii, which we visited on a former occasion, and in which locality we could find no trace of it, although the cultivated character of the country, through which the Meander flows, is well suited to its habits. It would therefore appear that the range of *P. cinerea* in Asia Minor is a curiously isolated one, and sharply confined to the centre of the peninsula."

The present species is not known to occur in Africa, and it does not range far into Asia. Dr. Severtzoff says that it is rare in winter in some parts of Turkestan; and Major St. John writes (E. Persia, ii. p. 273):—"The common Partridge is found all over Adarbaiján, possibly extending through the Elburz as far east as Tehrán. Taimúr Mirza, the Shah's grand falconer, assured me that this bird is found in the Lura or Karij valley, due north of that city." In

Eastern Asia the common Partridge is replaced by a tolerably closely allied but perfectly distinct species, *Perdix barbata*, Verr., which differs in having the feathers on the throat long and acuminate; the horseshoe-shaped mark on the breast is deep black instead of dark chestnut; and the bird is smaller in size than our Partridge.

There are few of our British birds whose habits are better known than those of the present species; for it is so highly esteemed as a game-bird that almost every country gentleman is thoroughly well acquainted with it. It usually frequents cultivated ground, or at all events places that are tolerably free from tree-growth, such as heaths, commons, or large tracts of grass-land, and does not resort to woods; nor does it ever appear to affect localities where the general growth is composed of marsh-grass, being a frequenter of the dry uplands, and not of low damp localities. Where the soil is well cultivated it is generally found in the fields, either in grass-fields and pastures or else in corn- or turnip-fields. During the winter season the Partridges keep together in coveys, seeking their food in the stubbles or anywhere that suitable food is to be had, until the early spring, when they disperse and pair to make arrangements for nidification. The Partridge is strictly a ground-bird, never perching on a tree; and it is very strong and swift on foot. When in search of food it walks quietly and sedately along, rather in a stooping attitude, the neck drawn in, and the general figure rounded; but directly it is in the least alarmed it stands erect, with outstretched neck, looking round to see where the danger threatens, and then, after giving a preliminary jerk of the tail, it starts off either on the wing or on foot, and in the latter case runs at a great speed for some distance. It is, however, an adept at crouching and hiding; any corner or unevenness in the soil is enough to constitute a hiding-place; and it will frequently crouch so close, trusting to the similarity in coloration between the soil and its plumage, that one may pass quite close without seeing it. When the Partridge takes wing it rises obliquely to some height, and then flies off in a straight line with a rapid motion of the wings, which produces a whirring sound; and when flying some distance it will sail along for a short space with outstretched wings, and then resume the rapid flapping motion. It is somewhat remarkable how close a covey will keep together, even after having been disturbed. Should a part fly off and settle down again in close cover at some distance, the remainder, perhaps scattered and flushed singly, as soon as they rise, fly directly to the place where their companions are, however closely concealed; and even when thoroughly scattered they will, when all danger is over, call each other and soon reunite. Should the old birds be shot off with a portion of the young out of a covey, the survivors will usually join another covey, where, after a short time, they are treated on terms of perfect equality.

The nest of the Partridge is always on the ground, generally in a grass-field, or else under shelter of a bush, sometimes in a hedge-row, and is a mere depression scratched in the ground, with a few dry straws as a lining: and the normal number of eggs appears to be from twelve to sixteen; but occasionally as many as twenty are deposited. Mr. Benzon informs me that in Denmark a spike is often placed in the nest in such a position that the bird cannot sit, and that it will then lay more than twenty eggs—in fact so many that the spike is covered by them. The eggs are pale olivaceous brown in colour, and average about $1\frac{1}{40}$ by $1\frac{2}{40}$ inch in size.

It seems probable that sometimes more than one female deposits eggs in the same nest; for Yarrell cites instances of twenty-eight and thirty-three eggs having been found; and in one of the

latter cases twenty-three young were hatched, and four more of the eggs were found to have fully formed live birds in them. When the eggs are near hatching, and the bird is disturbed, it is said to remove them; and there are instances recorded which tend to prove that this is the case. The young are able to run as soon as they are hatched, and hide when disturbed. Both the male and the female tend the young, and exhibit the greatest anxiety should any danger threaten, using every stratagem to deceive and entice away the intruder.

The Partridge is one of the most valued game-birds, and is therefore everywhere carefully preserved. The old method of shooting over dogs is now, comparatively speaking, but little followed, owing to the great alteration in the mode of agriculture that has taken place during the last twenty years. Referring to this, Mr. Stevenson writes (B. of Norf. i. p. 424) as follows:—"That those who were accustomed in the 'good old days' to kill Partridges after this fashion, more especially since the chief enjoyment of that time consisted in watching and profiting by the sagacity of the dogs, should regard the present system with but little favour is natural enough; but why sneer at the taste of younger men who have adopted from necessity, and not from choice, the shooting *en battue* of the last twenty years? What sport, I would ask, with even the best-trained dogs, would be afforded now on our closely mown stubbles? or, beyond a few 'points' here and there in a large field of turnips, what chance of a bag when the birds, once alarmed, commence running in all directions along the open drills? There is but little harbour in our highly cultivated lands; and the trimmed fences, in many places, afford scarcely shelter enough for a wounded bird. The 'four-course' system also, though a fine institution for farming-purposes, often puts the sportsman to much difficulty, his success depending greatly on the position of the crops—a very common answer to inquiries on any Partridge-farm, at the commencement of the season, being 'We have plenty of birds, but the turnips lie so awkward this year.' Under these circumstances, then, the gunners have but little chance of sport except by walking in line with the beaters; and unquestionably there is no comparison between the difficulty of such shooting and that under the old system, as the birds rise unexpectedly and at uncertain distances. By this method, now universally adopted both in the enclosed and more exposed portions of the county, very fine shooting is obtained on the wide open heath-lands in the western and south-western districts, when the birds, bred on the adjacent corn-lands, are either found basking on the outskirts, or are driven on from the neighbouring stubbles. The guns and beaters, advancing in line, drive the game forward into the nearest coverts; and here and there, though often at long intervals, thick belts of gorse and broom offer a fatal shelter to the birds, and a hot fusillade and a rapid addition to the bag repay the toil of the sportsman. Later in the season, however, when the birds become 'packed,' as it is termed (large coveys consorting together for mutual safety), the 'driving' system, before referred to, is now commonly adopted for both English and French birds. This is certainly the perfection of sport for those possessed of the necessary quickness and skill; but to the uninitiated, at least, it is nervous work, standing under shelter of a fence or a lift of hurdles drawn with gorse, and peering anxiously through the prickly screen to watch the motions of the driving party. Coveys and single birds are marked down at different points; and presently the beaters, spreading out in line, are coming on. Now is the time! never mind that noisy heart of yours, that will thump, thump, like an eight-day clock. Keep your eyes open, grip your gun-stock tight. Whish! Here they come!

Bang! bang! And the birds, killed high in the air, fall dead some thirty yards behind the gunners. An old hand, perhaps, bags his brace, though coming at heaven knows what an hour; for the pace of a Partridge thus flushed at a distance is something extraordinary. Ask the novice, for instance, after such a flight, if he got a shot that time? 'Shot! What at? I heard you fire; and something came with a whish past my head; but it was gone before I turned round.' Yet this style of shooting, which to sportsmen of the old school would have appeared an impossibility, is now accomplished with such certainty by the crack shots of the day, that at Beechamwell, near Swaffham, towards the close of the past season, a party of guns killed four hundred Partridges, in one day, by 'driving' only.

"It is by no means an unusual circumstance for Partridges when flushed in the vicinity of the telegraph-wires to fly against them in their headlong course. At Larling, where the International telegraph crosses an extensive heath, preserved for sporting-purposes, I have known as many as six or eight birds thus killed in one day when driven forward by the beaters; and Mr. Alfred Newton informs me that when shooting at Elvedon, near Thetford, he has seen five birds killed out of a covey in the same way. They are also occasionally found dead under the wires on foggy mornings, but this more particularly in places where the wires have but recently been introduced."

Mr. Carl Sachse, writing from Altenkirchen, Rhenish Prussia, sends me a few notes respecting the Partridge, which I translate as follows:—"This bird is not very numerous here; but in the lowlands of the Rhine it is three times as common. During severe snowy winters it happens sometimes that they become exterminated; and it then takes from three to five years to restock the district. This last year they were not numerous, and I reckon that in an area of about 7000 hectares there were only about forty coveys. They nest with us here in young woods, in clover-, oat-, and corn-fields, &c., but never in the meadows, as they so frequently do near the Rhine. They breed about the middle of May; and if disturbed and the nest is forsaken, the female makes a fresh nest, but deposits four or six eggs less than the normal number. Old birds deposit as many as twenty-four eggs, but young ones only lay from three to twelve. Owing to scarcity of food they sometimes leave the district, pack in flocks of fifty to a hundred or more, and go in search of better feeding-grounds. In October, when out shooting, I met with one such travelling flock of about fifty, and a second of about a hundred birds; but they were so shy that I could not approach them; and when they rose they flew so far that I could not mark them down. When much disturbed they will also leave. A covey of albinoes were hatched near here; and being so easily seen, they were hunted after almost every day. They became so shy that they could not be approached, and finally left altogether, and were soon after seen near Luiz, on the Rhine, distant about twenty-four kilometres."

Varieties in plumage of the Partridge are not very uncommon. I have seen many partial albinoes and very pale varieties, as well as peculiarly brown-marked and partially cream-coloured birds. Mr. Hancock showed me some extremely beautiful varieties, which he has figured (B. of North. & Durham, pls. 11, 12); and Mr. J. A. Harvie-Brown writes to me as follows:—"I have in my possession three specimens of this bird showing the variety with the white horseshoe-mark on the breast. It is worthy of remark that this variety appears to be gaining ground and becoming more numerous in some localities in Scotland, notably, I believe, in East Lothian. I

am indebted to my friend Mr. A. Burn Murdoch for the three specimens above mentioned, which he shot out of the same covey about the 30th October 1875, on the Gartencaber estate, in Perthshire. All three of these birds have the white horseshoe; and two have chin-spots and the neck pure white, and white superciliary marks; the third has the ordinary brown chin- and throat-mark and brown superciliaries. Mr. Burn Murdoch informs me that these are the first to his knowledge that have been shot on Gartencaber. The remainder of the covey were, as far as he could judge, similarly marked; and he had opportunities of seeing them on several occasions. It will be interesting to note the increase of this variety in its numbers, if it is indeed increasing."

The specimens figured are:—on the one Plate an old male and a young bird in change; and on the second Plate a female with young in down.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Hampstead, February 1st, 1870 (*Davy*). *b*, ♂, *c*, ♀. Sherringham, Norfolk, October 28th, 1876 (*H. M. Upcher*). *d*, ♂, *e*, ♀ *juv.* Aboyne, Scotland (*Waters*).

*E Mus. Howard Saunders.*

*a*, ♂ *ad.* Naples (*Doderlein*).

## Genus COTURNIX.

*Perdix* apud Brisson, Orn. i. p. 247 (1760).
*Tetrao* apud Linnæus, Syst. Nat. i. p. 278 (1766).
*Coturnix*, Bonnaterre, Tabl. Encycl. et Méthod. i. p. 217 (1790).
*Ortygion* apud Keyserling & Blasius, Wirbelth. Eur. p. 66 (1840).

This genus, of which a single species inhabits the Western Palæarctic Region, is represented in the Palæarctic, Ethiopian, Oriental, and Australian Regions.

In habits the Quails resemble the Partridges to some extent, frequenting similar localities; but they are migratory, travelling often in vast flocks, and they are not usually found in coveys, but are generally flushed singly, though several birds may be flushed one after the other in close proximity. They walk and run with ease and great swiftness, and when disturbed will either crouch or run in preference to taking wing. Their flight is swift, direct, and whirring like that of the Partridge; but they usually drop into the nearest cover again, and seek safety in concealment. They feed on seeds, insects, &c., usually feeding early in the morning and late in the evening. Like the Partridges they are fond of resting in sunny places and dusting themselves. They are both polygamous and monogamous; and the males are extremely amorous and pugnacious during the pairing-season. The nest is a mere depression scratched in the ground and lined with a few grass-bents; and the eggs, which are numerous, are pale brownish yellow, blotched and spotted with dark brown.

*Coturnix communis*, the type of the genus, has the bill short, compressed, the upper mandible sloping to the tip, which is narrow and sharp-edged; head entirely feathered; wings rather short, full, the first and second quills about equal in length and longest; tail short, much rounded, the feathers weak and decurved; tarsus stout, rather short, compressed anteriorly, and posteriorly scutellate, but without spur or tubercle behind; hind toe small, slender; anterior toes moderate; claws slender, short, slightly curved, moderately acute.

The Virginian Colin (*Ortyx virginianus*) has been included in the British list; but the specimens killed appear to have invariably been birds which have been turned out. Several sportsmen have imported considerable numbers of the Colin; and they have bred in some of our southern counties, but scarcely appear to have become permanently naturalized in any part of the country.



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E.Neale lith

Hanhart imp

COMMON QUAIL.
COTURNIX COMMUNIS.

# COTURNIX COMMUNIS.

(COMMON QUAIL.)

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*Perdix coturnix*, Briss. Orn. i. p. 247 (1760).
*Perdix coturnix major*, Briss. Orn. i. p. 251 (1760).
*Tetrao coturnix*, Linn. Syst. Nat. i. p. 278 (1766).
*La Caille*, Buff. Hist. Nat. Ois. ii. p. 449, pl. xvi (1771).
*Coturnix communis*, Bonnat. Tabl. Encycl. et Méthod. i. p. 217 (1790).
*Perdix coturnix* (L.), Lath. Ind. Orn. ii. p. 651 (1790).
*Coturnix dactylisonans*, Meyer, Vög. Liv- und Esthl. p. 167 (1815).
*Coturnix vulgaris*, Flem. Brit. Anim. p. 45 (1828).
*Coturnix major*, C. L. Brehm, Vög. Deutschl. p. 527 (1831).
*Coturnix media*, C. L. Brehm, op. cit. p. 528 (1831).
*Coturnix minor*, C. L. Brehm, op. cit. p. 529 (1831).
*Coturnix europæus*, Swains. Classif. of Birds, ii. p. 344 (1837).
*Ortygion coturnix* (L.), Keys. & Blas. Wirbelth. Eur. p. 66 (1840).
*Coturnix dactylisonans* vel *indicus*, Hodgs. in Gray's Zool. Misc. p. 85 (1844).
*Coturnix vulgaris japonica*, Schlegel, Fauna Japonica, p. 103, pl. 61 (1850).
*Coturnix baldami*, C. L. Brehm, Vogelfang, p. 274 (1855).
*Coturnix leucogenys*, L. Brehm, Naumannia, p. 288 (1855).
"*Coturnix capensis*, Licht.," Gray, Hand-l. ii. p. 268. no. 9705 (1870).
"*Coturnix ypsilophorus*, Bosc," Gray, ut suprà (1870).

*Gearradh-gort*, Gaelic; *Caille*, French; *Codorniz*, Portuguese; *Codorniz*, Spanish; *Quaglia*, Italian; *Summiena*, Maltese; *Mell'houa*, Arabic; *Soumēna*, Moorish; *Wachtel*, *Schlag-Wachtel*, German; *Kwartel*, Dutch; *Vagtel*, Danish and Norwegian; *Vaktel*, Swedish; *Peltopyy*, Finnish; *Pérépell*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 170; Werner, Atlas, *Gallinacés*, pl. 16; Kjærb. Orn. Dan. taf. 28; Frisch, Vög. Deutschl. taf. 117; Fritsch, Vög. Eur. taf. 30. figs. 7, 8; Naumann, Vög. Deutschl. taf. 166; Sundevall, Svensk. Fogl. pl. 31. fig. 4; Gould, B. of Eur. pl. 263; id. B. of G. Brit. iv. pl. 15; Schlegel, Vog. Nederl. pl. 180; Temm. & Schl. Fauna Japon. pl. 61; Roux, Orn. Prov. pl. 261; Bettoni, Ucc. Lomb. pl. 5.

♂ *ad.* pileo nigro-fusco, ferrugineo-cervino variegato, striâ centrali et striâ utrinque in capitis lateribus cervino-albidis: corpore suprà fusco, nigro notato et striis longitudinalibus albidis vel albo-cervinis: remigibus fuscis, cervino-brunneo fasciatis et nigro-fusco vix notatis: caudâ saturatè fuscâ, cervino transfasciatâ: capitis lateribus pallidè ferrugineo-fuscis: gulâ et gutture cervino-albidis, mento cum gulâ mediâ nigro-fuscis, striis binis fusco-ferrugineis cinctis, quarum altera ex basi rostri, altera ex auribus

descendit: gutture imo cum pectore pallidè ferrugineis, lineolis longitudinalibus albidis notatis: corpore reliquo subtùs cervino-albido, hypochondriis ferrugineis cervino striatis: rostro fusco: iride fuscâ: pedibus fusco-incarnatis.

♀ *ad.* corpore suprà sicut in mare picturato: gulâ albidâ, pectore maculis nigricantibus notato.

*Adult Male* (Leadenhall Market). Crown and nape blackish brown, variegated with reddish buff, and with a central and two lateral lines of buff; back, scapulars, lesser wing-coverts, and rump warm light brown, broadly variegated with black and dark brown, and marked with long dashes of light buff; wings dull, rather dark brown, barred with buffy brown, and slightly marked with blackish brown; tail short, nearly concealed by the tail-coverts, dark brown, barred with buff; sides of the head pale brown; sides of the neck and the entire throat buffy white, a black patch covering the chin, and centre of the throat having a black band at the base; below this, again, is a rufous band, and the sides of the neck are washed with rufous; breast pale rufous, dashed with white; rest of the underparts buffy white; the flanks rufous, with central buff stripes; bill brownish horn; iris brown; legs fleshy brown. Total length about 7 inches, culmen 0·5, wing 4·15, tail 1·6, tarsus 1·1.

*Adult Female* (Andalucia). Upper parts as in the male; but the chin and throat are buffy white, unmarked with black, and the breast is reddish buff, spotted with blackish brown.

*Young in half down* (France). Centre of the crown dark brown with a central buff stripe; sides of the crown warm reddish buff; upper parts generally blackish brown, barred with warm buff, and marked with long buffy white stripes; chin, throat, and sides of the head buffy white; rest of the underparts buffy white, closely spotted with blackish brown.

*Obs.* The variation in the coloration, and more especially in that of the throat, of the male Quail is very great, and has been remarked and commented on by many authors. One would certainly be inclined to separate it into two or three species, were it not that in a series of specimens the variation exhibited is so great as to make it impossible to draw the line anywhere. The ordinary form has the throat buffy white or rusty buff, encircled below by two semicircular bands of a rusty brown or dark brown colour, which join similarly coloured lines down each side of the head; but one sees almost as frequently specimens with the throat partially or almost entirely covered with a blackish brown or rusty brown patch; and another extreme form has the entire throat and sides of the head rich rusty red. This last form is but seldom seen in Northern and Central Europe; but I have seen examples from Southern Europe, and it appears to be the predominant form in the Azores, Cape-Verd Islands, Mauritius, South Africa, China, and Japan: in some of these, however, there is more or less black on the throat. A specimen from Spain closely resembles examples from Japan in having the throat rusty red, but has the rest of the plumage rather duller in colour. Examples from the Azores are much smaller than the average of European examples, the wing measuring only 3·6 to 3·8 inches, and are rather more richly and brightly coloured, the throat is rusty red, in some without any black, whereas in others there is a small or large patch of blackish brown on the chin and throat.

Specimens from the Cape-Verd Islands closely resemble those from the Azores; and there is one from Mauritius in the British Museum which is very dark in general coloration, and has a red throat. I possess three males from Port Elizabeth, South Africa, one of which has the throat pale rufous buff, one still lighter, and the third rich rufous, all three having the black on the throat much developed; and the breast is more rufous than in European examples, the upper parts being much darker. A male from Yarkand has the throat white, the two semicircular bands rusty brown, and a long blackish brown spot on the chin; and the upper parts are pale in coloration.

Specimens from China and Japan have the sides of the face and the entire throat rich rusty red, with but

seldom any trace of a black spot, and are a trifle smaller in size than the average of European birds; and this extreme form seems almost to be the only one found in Eastern Asia. I was at first inclined to treat this form as distinct; but I found examples from Southern Europe, the Azores, and Mauritius precisely agreeing with others from China and Japan.

Naumann cites all the above varieties as occurring in Germany, and says that those which have the throat and cheeks dark rusty brown are called "Mohrenwachteln," those which have the throat banded with dark brown on a white or a rusty yellowish ground are called "Kreuzwachteln," and those with the black patch on the throat "Kohlhähne." He also adds that there is a great variation in size, some being larger and others smaller.

THE range of the Quail is very great; for it is found throughout the whole of Europe, except in the far north, in Asia as far east as Japan, and in Africa as far south as the Cape colony. In Great Britain it is tolerably common, and breeds throughout the country here and there up to the north of Scotland. Mr. A. G. More, in his article on the distribution of birds in Great Britain (Ibis, 1865, p. 429), writes concerning it:—"Thinly scattered, during the breeding-season, from the south of England to the very north of Scotland. Yet there are few counties in which the Quail is considered to breed annually; nor can these be grouped in any manner so as to show where the species is most numerous.

"It has certainly decreased of late years in several districts, and this apparently not owing to any cause that can be discovered. In the west of Ireland the same diminution has been noticed. In former times I am informed that the Quail was reckoned as one of the regular winter visitors on the west side of the sister island, but it has not been so much observed of late years. It is still considered to breed annually about Belfast; and in county Armagh I have myself heard its note during the breeding-season. The bird is probably better known in the north-east of Ireland than in any part of England or Scotland.

"If there is any difference, the range of the Quail seems to incline rather to the east side of Great Britain, as well as of Ireland, during the breeding-season. It seems to occur chiefly in the south of England during winter." Mr. Cecil Smith informs me that, though never very common in Somersetshire, it is found there at all seasons of the year, and he received the eggs and the remains of a hen bird, which had been killed by a mowing-machine, in June. In Norfolk, Mr. Stevenson says, it is far less numerous than it formerly used to be, but it breeds there in several localities; and Mr. Cordeaux writes, respecting its occurrence in the Humber district (B. of Humber Distr. p. 82), as follows:—"From what our oldest sportsmen have told me, I gather that the Quail was by no means uncommon in Lincolnshire half a century since. Since this period the drainage and improved cultivation of the marshes and fens, as well as the enclosure and high farming of the 'wolds,' have so entirely changed the character of the district, and broken up and destroyed their old haunts, that of late years they have been observed only as rare and occasional visitants.

"It has occasionally been shot in East Yorkshire. On the 24th of July, 1870, Mr. Boyes found a nest of the Quail near Beverly, containing eleven eggs, on the side of a railway embankment amongst grass &c. The nest was a slight hollow containing a few dead grasses, and the eggs laid slovenly, some on the top of the others (see Zoologist, 1870, p. 2307). Mr. Alington some years since fell in with a large bevy in the parish of Thoresway, on our wolds.

"Plentiful in North Lincolnshire in the autumn after the hot dry summer of 1870, the year of the great Franco-Prussian war—in one instance three brace having been killed in one day to a single gun, and eight brace falling during the same season to another sportsman on a farm near Caistor, on which land two or three large bevies occurred, doubtless bred there, as several eggs had been taken in the same locality during the summer." Mr. Hancock states that in Northumberland and Durham it is "a spring-and-autumn migrant, not by any means common, and somewhat local, but occasionally breeding in the district. Nests have occurred at Howick, Cullercoats, Fulwell, Callerton, Fell, Wallsend, and Westoe." According to Mr. Robert Gray (B. of W. of Scotl. p. 245) it is "a well-known visitor to the western counties of Scotland. It breeds with us in limited numbers; and in the autumn months it is a familiar bird in Ayrshire, extending over the whole of the county. In many places it is called *weet-my-feet* on account of its call-note resembling these words, and which may often be heard on dewy evenings in fields of grass or stubble where grass has been sown. I have often listened to its soft chatterings on still summer nights in situations like these near Girvan, where the Quail is by no means uncommon. In the adjoining county of Wigton Quails appear to have been abundant about the end of last century.

"This bird appears to be very rare in the Long Island. There is a specimen, which I have seen, in the collection of Sir James Matheson, Bart., at Stornoway; it was shot at Lewis, where, I have since learned, one pair, at least, bred in 1868. When in the island of North Uist in the beginning of August 1870, Mr. John Macdonald, Newton, showed me a nest of twelve eggs which had been taken near his residence about ten days previously. These are now in the collection of Captain Orde. On the east of Scotland it is by no means so common as on the west; still it is met with in nearly all the counties, ranging from Berwick to Orkney. In the midland counties it is sparingly distributed, but is rare in the north. The nest of the species is not often found. I have procured eggs from Lanarkshire, Ayrshire, Wigtonshire, and Kirkcudbrightshire. The nest has also been found in Mid Lothian. Mr. J. H. Dunn, of Stromness, has informed me that on the 4th October 1851 he got eleven eggs of the Quail, that were found by a woman when cutting grain near his house." Messrs. Baikie and Heddle state (Nat. Hist. Ork. p. 57) that one was shot in Sanday, Orkneys, by Mr. Strang in May 1833; and Dr. Saxby writes (B. of Shetl. p. 155) as follows:—"At Burrafirth, in Unst, on the 25th September 1868, a woman brought me eight eggs which she had just found while reaping a small field of oats. She stated that a few weeks previously she had observed a bird resembling a small Land-Rail in the same field, but, as it suddenly disappeared, it was supposed to have been killed by a cat. There were ten eggs originally; but two were accidentally broken on the way over the hills. This is the only recorded instance of the occurrence of the Quail in Shetland." I may here remark that, in his Notes on the Ornithology of Sutherland, Mr. Harvie-Brown writes as follows:—"Amongst other records of its nesting in Caithness and Sutherland I may instance the following. In the former county Mr. R. J. Shearer records that the Quail bred in 1860 near Ulbster, and that 'twelve eggs were laid and hatched. I shot two of the young and the old cock in autumn.' In Sutherland the Quail has nested in the east of the county several times; and Mr. T. Mackenzie, of Dornoch Castle, writes to me that he himself 'found the nest, but, unfortunately, after the young had been hatched. The fragments of egg-shells enabled me to identify them as Quail's

eggs; and the young birds were seen in September following.' There are specimens also in the Dunrobin Museum." In Ireland the Quail is said to be much more numerous than in England; and Thompson states that it is very generally distributed over the cultivated districts in summer, and that numbers also remain during the winter.

It is not found in Greenland or Iceland; but Captain Feilden says that it occurs not unfrequently in Færoe as a summer visitor. Herr Müller received nine eggs from a nest taken near Qualvig on the 1st October, 1865; and another nest was procured in Sandoe, August 1866, containing six eggs. In Norway it breeds in tolerable numbers in the lowlands of Christiania and Hamar Stifts up to the Trondhjemsfjord, where it is frequently seen in the Surendale, and one was shot at Tromsö. On the west coast it is rare, but was seen in Söndfjord in the summer of 1858 by Dr. Bidenkap. It breeds in the more elevated subalpine portions of the Foldale, in the Dovre. It arrives late in May in Southern Norway, and leaves again late in September. Professor Sundevall remarks that, as a rule, it can only be considered as a rare species in Sweden, where it is somewhat sparingly distributed from Skåne up to Södermanland, Upland, and Nerike; but occasionally it breeds there in tolerable numbers. Previous to 1820–30, he remarks, it was scarcely known in Sweden, but has since then gradually increased. In Finland it is said to be rare; but occurs sparingly here and there, Dr. Palmén says, in the southern and central portions of the country. It has been met with near Gamla Karleby; and Mr. Tengström heard and saw it in June 1839 at Latvajärvi lake, close to the frontier of Finland, in the Archangel Government, in 65° N. lat. It is not uncommon in many parts of Russia. Meves met with it in the Archangel Government; and Messrs. Alston and Harvie-Brown saw two in the flesh at Sujma, near Archangel. Sabanäeff says that it was met with by Kessler in the southern portion of the Olonetz Government. In the Ural he met with it only in the cultivated portions of the Perm Government; but it spreads northwards as cultivation progresses. Mr. Taczanowski says that the Quail is common in Poland in summer, arriving about the 10th May and leaving usually late in October, though a few stragglers may be seen as late as the 15th November.

Throughout the whole of North Germany the present species is tolerably common, and generally distributed during the summer; and Mr. Collin states that it is found in Denmark from May to September. Mr. Fischer says that, as a rule, it is only sparingly met with in Vendsyssel, but in 1863, curiously enough, it was exceedingly numerous, and in the following year it was also more numerous than usual. From then to 1868 it was, as usual, not common; but in that year again it was more plentiful. Schlegel says that it is found in Holland during the breeding-season, but in most parts it is rather rare than otherwise. It arrives in May, and leaves in September. In Belgium and France it is common from about the middle of April to the end of September, and is especially numerous during passage on the Mediterranean coasts. M. Adrien Lacroix states that it breeds throughout the Pyrenees; and Professor Barboza du Bocage says it is common in Portugal. Dr. E. Rey, however, states that he only heard its call once in Estremadura, near Barreiro, on the 24th of March. It is certainly common in Spain. Mr. Howard Saunders writes (Ibis, 1871, p. 224) that "some remain throughout the winter in the south of Spain; but the greater number arrive in April and remain to breed all over the country. Torremolinos, near Malaga, is a noted Quail-ground." According to Colonel Irby (Orn. Str. Gibr. p. 138) "the chief vernal migration of the common Quail is during the months of

March and April, whilst the autumnal passage is almost entirely executed during the latter half of September, at that time their numbers being sometimes incredible. The Andalucian cazadores profess to recognize two kinds of Quail—those which are migratory and called 'criollas,' and those which are resident and so named 'castellanas.' There is certainly much difference in the colour of the plumage and of the legs, the criollas being lighter-coloured and slightly smaller birds than the castellanas, which are very dark; otherwise, in habits, note, and eggs, there is no difference, although at a glance the resident and migratory races can be easily distinguished.

"There are a great number of these resident Quails, which, throughout the winter, seem to collect together and haunt certain favourite spots, these places never being without Quail. You may kill three or four, and hunt about unable to find more; but go to the same place in a few days' time, and you will find that some fresh ones have taken possession of the ground."

Von Homeyer states (J. f. O. 1862, p. 420) that it is a migrant in the Balearic Isles, and he did not hear its call before the 26th of April. On the two larger islands it is very abundant; and he remarks on the difference of coloration in specimens examined by him from there. In Savoy the Quail is abundant from April to October, and also in Italy, where a few winter in the southern provinces. In Sardinia, Mr. A. B. Brooke writes (Ibis, 1873, p. 336), large numbers arrive in the spring, and a few remain throughout the year; and in Sicily immense flights pass near Palermo. In Malta, Mr. C. A. Wright states (Ibis, 1864, p. 139), "In spring and autumn, especially the latter, large numbers of these birds alight on the island, and constitute the principal game of the sportsmen of Malta. Although usually arriving with the prevalent winds of the season, as before mentioned in reference to birds in general, they also find their way here during perfect calms, provided that it is their season of migration. In spring they come during the night, and chiefly to the west and north-west coast, Gozo being at this season the most favoured locality. In the autumn, on the contrary, they arrive for the most part during the hours of daylight, and the east and south-east coasts are the parts where they are most abundant; at both seasons, however, they are found scattered throughout both islands. Quails come here in the greatest numbers in September, though in April very large flights occasionally occur. A good shot may bag in a day, in the height of the season, fifty to sixty brace by hard work, notwithstanding the numerous sportsmen out; but such sport is the exception, days repeatedly occurring on which hardly a bird can be found. Ten or fifteen brace are ordinarily a very good bag. Various methods, in addition to shooting, are adopted for catching these birds. A few breed here in March. Some of these are also caught by imitating the call-note of the female, and so drawing the males, which are the first to arrive, into nets spread on the standing corn. A few solitary birds are to be found throughout the winter."

Lord Lilford, in his article on the ornithology of the Ionian Islands (Ibis, 1860, p. 238), says that "a few Quails remain the whole year in Corfu and Epirus; but great numbers arrive every year in April, and remain for a few days. On the little island of Fano, especially, they sometimes at that season alight in incredible numbers, often only remaining a single night. I have occasionally met with good sport at Quails in the maize-fields of Epirus in September; these were chiefly young birds that had been bred in the country. A few are always to be found in winter on the grassy hills of the mainland opposite to Corfu, particularly on those near the little harbour of Pagania." In Greece the Quail is very numerous during the seasons of passage;

and a few remain to breed there, some also remaining throughout the winter. The spring passage commences in March; but the main body pass about the middle of April. In the autumn they repass late in August or early in September.

In Southern Germany the Quail is also common during the summer season. The late Mr. E. Seidensacher informed me that numbers breed in Styria, and that sometimes vast swarms were seen near Cilli in the autumn; and, according to Dr. A. Fritsch, it is very common in Bohemia in some seasons, arriving in May and leaving in September. The official game-lists show that about ten thousand are killed there annually. It is found in the countries bordering the Danube; and Messrs. Elwes and Buckley state (Ibis, 1870, p. 328) that it arrives in Turkey in April in immense flocks, and disperses all over the country to breed. Numbers are killed on the shores of the Bosphorus during the two seasons of passage.

In Southern Russia it is extremely abundant from April to October, especially in Abasia and Mingrelia, and is also numerous in Asia Minor, and, according to Dr. Krüper, winters near Smyrna. Dr. Tristram says (Ibis, 1868, p. 215) that in Palestine a few pairs were "found here and there throughout the winter; but in March they returned from the south by myriads in a single night, and remained in all the open plains, marshes, and corn-fields."

It is found numerous in North-east Africa. Captain Shelley says (B. of Egypt, p. 223) that "a few Quail remain in Egypt throughout the year. The migratory birds arrive there in abundance towards the beginning of March and again in November, the greater number only passing through the country on their way to and from Europe; but still many remain to breed. When these travellers have arrived in the country the fact soon becomes known from their peculiar call, which may be constantly heard from among the crops, especially in the early morning and towards sunset. These are the best times for shooting Quail; for during the heat of the day they retire to the thicker crops, and are very unwilling to rise." Von Heuglin, who says that it is found less numerous in Egypt on the spring passage, but in vast numbers in August, September, and October, adds that it does not appear to winter in Abyssinia, Kordofan, or Sennaar, but probably passes south of the equator. A few remain to breed in Central and Lower Egypt, nesting in April. In North-west Africa the Quail is common, and would be more so in Algeria, Mr. Gurney, jun., says, were they not so much sought after. The shooting-season is opened from the 20th of March to the 15th of April, principally for their benefit; and large numbers are annually killed. He remarks that, though on passage, they were generally paired. Dr. Taczanowski also writes (J. f. O. 1870, p. 51) that in the Province of Constantine "the Quail is sometimes found throughout the winter on the coast, in the Tell, and in the tamarind-thickets. They arrive in February in great numbers from the interior of Africa, and visit the fields round the oases, where they can also be seen about the end of March in large flocks. If they were everywhere so much sought after as in Biskra, they would have long ago entirely disappeared in Europe. During the time of their migration in autumn they live on the sea-coast and avoid the date-region." Colonel Irby writes (*l. c.*), "Favier states that the Quail is very abundant on passage on the Moorish side of the Straits of Gibraltar, many remaining to breed, the majority crossing over to Europe during March and April, returning in October and November."

It occurs down the African coast to the Cape of Good Hope, as also in the Azores, Madeira, and the Canaries. Mr. Godman writes (Ibis, 1866, p. 99), in the Azores, it is "plentiful in the

cultivated lands on all the islands, and even in the gardens. It is not migratory here, and is said to have two, and sometimes even three, nests in the year. It is certainly exceedingly numerous, and affords excellent sport; on one occasion a Portuguese gentleman and I killed 157 in a few hours." Dr. C. Bolle, writing on the ornithology of the Canaries, states (J. f. O. 1855, p. 173) that it is "very plentiful on all the islands, where, it is said, it breeds twice, and even three times in the year, and as late as August. It is also stated that some leave the country in the winter, but that the majority do not migrate, and feed during the cold weather on the orange-coloured berries of the *Daphne gnidium*. At Fuerteventura I have shot many of them on stubble-fields after the harvest, which takes place there in April. The best shooting-season is in September and October, at which time the Quails are extremely fat. A good sportsman can kill as many as fifty in one day at the Rodeos." He further adds (J. f. O. 1857, p. 334) that he heard the first in Canaria in 1856, in May, on the Cumbre of Tejada, and subsequently near Tenteniguada, and all along the elevated mountain-ridges. There are specimens in the British Museum from the Cape-Verd Islands; and Professor Barboza du Bocage records it from Angola and the Island of St. Thomas. Andersson (B. of Damara Land, p. 249) states that it is not uncommon in Middle and Southern Damara Land; and he adds that during the year 1865 countless numbers of Quails arrived in the neighbourhood of Capetown; whilst much of the rest of the colony, which had suffered severely from drought, was nearly denuded of these birds. According to Mr. E. L. Layard it usually arrives in the Cape colony about the end of August, and sometimes as early as the 15th of that month, in great numbers. Mr. Ayres states (Ibis, 1874, p. 103) that it is pretty generally distributed in the Transvaal, and is tolerably plentiful amongst the grass along the banks of the river about five miles from Potchefstroom; and Mr. Barrett writes (Ibis, 1876, p. 208), in his paper on the ornithology of the Lydenburg district, that he has "shot this Quail in the Chalumna district, British Kaffraria, where it arrived in great numbers about the end of August. In the Transvaal it is widely distributed. I have shot it near Pretoria, Rustenberg, Nazareth, and many other places. I received my last from Marico district." I have examined specimens from Mauritius; and Professor Newton writes (Ibis, 1863, p. 454) that he received, through Mr. Caldwell, a skin from Antananarivo, in Madagascar, where it is said to be not uncommon.

To the eastward the present species is found as far as Japan. It breeds in Turkestan; and according to Mr. Blanford (E. Persia, ii. p. 278) it is "common in Persia in all cultivated fields during the time the crops are green: it leaves the Persian highlands in winter, resorting to India." He says, "I heard Quail calling in the green crops at Bampúr at the beginning of April, at less than 2000 feet above the sea, at about 5000 to 6000 feet in May, and at Kohrúd, between Isfahán and Tehrán, 7000 feet above the sea, in the middle of July, and I have no doubt but that they breed at different times according to the elevation." Mr. A. O. Hume states (Stray Feathers, i. p. 227) that he met with it constantly in Sindh, though never far from cultivation, usually in scattered pairs; but he was told that in certain seasons they are very plentiful. According to Dr. Jerdon (B. of India, ii. p. 587) it is found throughout India in considerable numbers during the cold weather, most migrating during the rains, and breeding elsewhere, but a few pairs remaining and breeding in various parts of the country, especially towards the west and north-west. Dr. Henderson writes (Lahore to Yarkand, p. 284) that "one specimen of the common

Quail was caught on the 24th September, at the Karatāg lake (13,500 feet), and kept alive for several days. It was the only Quail actually observed during the journey; but though not flushed or bagged, they were heard calling in all the fields in Yārkand." It is found in South-eastern Siberia. Dr. Radde met with it throughout the whole of those portions of that country visited by him; while, according to Dr. Dybowski, it is scarce in Dauria, and only met with during the seasons of passage, but the natives informed him that it occasionally breeds there, and is more frequently met with in the valleys of the Irkut. In Mongolia it is met with on passage, but is said to be rather scarce, though in China it is, Mr. Swinhoe writes (Ibis, 1861, p. 341), "very common, even as late as October, in which month immense flocks of them dropped in the neighbourhood of the Taku forts, evidently birds from more northerly parts bound south." He says that in the island of Formosa it is resident, but more numerous in the winter. In Japan, as in China, it appears to be common and generally distributed.

In general habits the Quail differs considerably from the Partridge, and appears more especially to be far less gregarious than that bird; for, instead of being found in coveys, it is generally flushed singly, though frequently many are found in the same patch of herbage. Only when the young birds are under the charge of the mother do they keep together, the male bird being, however, usually absent; and very soon after they are able to shift for themselves they scatter, and do not afterwards reunite. During passage, however, they collect in vast flocks, and in some parts of Europe, especially on the shores of the Mediterranean, they arrive in such quantities as to make the chase very remunerative. Numbers are also netted; and as they are easily kept alive, they are sent long distances to market fatted for sale. Large numbers are imported to London from the Continent in flat large cases covered with cloth on the top, provided with a feeding-trough in front; and the birds appear to travel well, and even thrive, in these uncomfortable-looking cages. It is stated that when migrating the Quail flies at a great altitude; and in places where they settle down they are said to drop almost perpendicularly from the air, and to be in a very tired and exhausted state. They migrate during the night, especially when it is moonlight, and also early in the morning or late in the evening, resting during the day-time; and as they travel northward some are left here and there on the way to take up their breeding-quarters. The flight of the Quail is swift, whirring, and direct, like that of the Partridge; but it rarely flies very far, but drops again into some convenient cover, and is averse to take wing unless it cannot avoid doing so. It runs easily and quickly, being strong on its legs, and, with the help of its wings, can jump to a great height in running along through tangled grass. When flushed it seems to rise unwillingly, and not until almost trodden on, and flies quite low, not above about five feet from the ground. Speaking of the habits of the Quail in Egypt, Mr. J. H. Gurney, jun., says (Ramb. of a Natur. p. 183):—"Although they are gregarious in the strictest sense of the word, they never fly in a flock, but each, regardless of its neighbour, goes its own course, straight and quick, about a yard from the ground. They almost invariably get up at your feet, and seldom fly more than 400 yards. I never saw any on passage by day; and it is said that, unlike the Storks, they only migrate by night. As Captain Shelley remarks, they are very unwilling to rise during the heat of the day. Morning and evening are the best times to shoot them, and ripe barley, or strips of lentils just ready to cut, the best places in which to look for them. It is wiser not to go into barley-fields, &c., where the business of

harvest has commenced, for the following reason: the national laziness shows itself in the Arab husbandman, who prefers reaping as he sits; Quails fly low; and his head, hardly visible above the crop, is in danger of receiving the sportsman's charge. I never attempted to make any great bag; but I have frequently shot ten brace. The biggest bag I heard of was eighty brace to one gun, or rather to one sportsman with two guns, at Cairo. The neighbourhood of Cairo is very good; indeed it would be hard to particularize any place which is not good at the right time; but on the whole we nowhere got better shooting than in the plains of Thebes, right up to the very colossi. Without a dog you must expect to lose a third, unless your native is very expert in marking them. By the middle of April the migration was all past. On the 12th we killed thirteen brace: that was the last day we made a bag. After that they became just as scarce as they had been in the Delta in January. That some stay the summer to breed is certain; and it would appear that a few nest in the winter or early spring; for on the 22nd of March I flushed an early 'squeaker' able to fly, which must have been hatched some weeks. I never saw any others. I conclude the natives occasionally catch them for their own consumption, as I was now and then brought a snared one. In Hasselquist's time they netted them in Lower Egypt."

The food of the Quail is very similar to that of the Partridge; but it feeds more on small seeds and on insects than that bird. It eats the seeds of numbers of weeds of various sorts and of different sorts of grasses, and various insects, such as flies, grasshoppers, cicadas, ants, and so-called ants' eggs, small coleoptera, and leaf-insects. It feeds during the night and early in the morning and late in the evening, seldom, if ever, during the day, when it remains at rest in some convenient cover. Like many of its allies it is fond of dusting itself and scratching in the dry soil, frequently reclining on its side to sun itself.

The call- or pairing-note of the male bird is well known wherever this bird is found in the breeding-season. It consists of a short prelude, harsh and deep, resembling the syllables *rowow*, after which comes the loud shrill *picwirwic* or *pickernic*, which is so well known to the peasant, who hails it as a forerunner of the harvest. Naumann tells us that the German peasant says the Quail utters the words "Bücke dich" (stoop), or "Bück' den Rück" (bend your back). The female never utters the second shrill note, but only sometimes, when under intense sexual excitement, calls *rowow*. During the heat of the day the call of the Quail is scarcely ever heard, but usually in the evening, during fine still weather, and throughout the night to late in the morning, and most often in the months of May and June. Besides the above pairing-call both sexes have a note with which they call each other, resembling the syllables *beebewe*; and when suddenly flushed and alarmed they utter a note *tril-reck-reck-reck*, which, however, is not very loud.

The Quail is both monogamous and polygamous; for in some parts they are found paired, the male contenting himself with one mate, whereas in others he will have more than one. Few birds are so ardent and intensely amorous; and this ardent nature of the Quail has given rise to various superstitions or curious stories amongst the ancients. When a male in the height of amorous passion meets a female he will tread her time after time, not unfrequently, it is said, as often as nine or ten times in succession; and if she proves coy to these advances, will attack and ill use her, sometimes even killing her. Moreover, the male Quail is extremely pugnacious, and will attack any other male who comes within the district or piece of ground of which he has

taken possession, with the greatest fury. Formerly Quails used to be kept for fighting: this is still done amongst some of the eastern nations; and they are said to fight until one succumbs and is killed by his adversary.

The Quail breeds very late, usually late in June or early in July, the nest being a mere depression scratched in the soil, usually in a wheat- or grain-field, or else in the grass, and lined with a few grass bents or stems of plants, in which from eight to a dozen or fourteen eggs are deposited. The female incubates very closely, not leaving her eggs until very closely approached, and then running away, not flying off. Incubation lasts from eighteen to twenty days; and the young birds are able to run almost directly after they are hatched. They are very carefully tended by the mother, and fed with insects and insect-larvæ, and grow very quickly, being able to flutter along when only a fortnight old, and in six weeks time are full-grown and able to fly, and then scatter and take care of themselves. It appears that only one brood is raised in the season; but should the first eggs be destroyed she will lay another lot, though less in number than the first.

The eggs of the Quail are somewhat large for the size of the bird, measuring, on an average, about $1\frac{7}{40}$ by $\frac{37}{40}$ inch; they vary somewhat in shape, and are richly coloured with deep olivaceous brown or blackish brown on a brownish yellow ground, some being marked all over with small spots, and others richly and largely blotched, the variation in the markings being very great.

There appears to be little doubt that the present species is the bird that supplied the famishing Israelites with food in the wilderness. It has, however, been asserted by various authors that it was a flying fish, a locust, and a Sand-Grouse. But every thing tends to prove that it must have been a Quail; for it was most undoubtedly a bird, and the present species is almost the only one that migrates in such great numbers as to answer to the description in Holy Writ. In such quantities does it migrate, that, according to Yarrell, as many as 160,000 are recorded to have been netted in one season on Goat Island, a small island at the entrance of the Bay of Naples; and Temminck states that near Nettuno, in the kingdom of Naples, a hundred thousand have been taken in a day.

The specimens figured are those above described, and are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Leadenhall Market, September (*H. E. D.*). *b*, *c*, *pulli*. France (*Fairmaire*). *d*, ♂, *e*, ♀. Casa Vieja, Andalucia, May 10th, 1874 (*Col. Irby*). *f*, ♂ *juv.*, *g*, ♀. Stilo, Albania, November 2nd, 1871 (*Hanbury Barclay*). *h*, *i*, *k*. Port Elizabeth, S. Africa (*Cutter*). *l*, ♂. Yarkand, January 1874 (*Capt. Biddulph*). *m*. Yeddo, Japan (*C. M'Vean*).

*E Mus. Lord Tweeddale.*

*a*, ♂, *b*, ♀. Croydon, Surrey, May 19th, 1869 (*Davy*). *c*, ♂. Usern, Switzerland (*Nager*). *d*, ♂, *e*, ♀. Valencia, Spain, October (*H. Saunders*). *f*, *g*, ♂. N.E. India. *h*, *i*, ♂, *k*, ♀. N.W. India. *l*, *m*, ♂, *n* ♀. Candeish, India. *o*. Umballah, November 1866 (*Beavan*). *p*, ♂. East Bardwan, India, February 1864 (*Beavan*). *q*, *r*, ♂. Chefoo, China, May 1873 (*R. Swinhoe*). *s*, ♂. Fengwanshan, China, April 1875. *t*, ♂. S. Yezo, Japan, August (*Whitely*).

*E Mus. Brit. Reg.*

*a*, ♂. Gibraltar (*Col. Irby*). *b*. Kerjath Jearim, Palestine (*Canon Tristram*). *c*, ♂, *d*, ♀. Cape-Verd Islands. *e*, ♂. S. Africa. *f*, ♂. Mauritius. *g*, *h*, *i*, *j*, *k*. Nepal (*Hodgson*). *l*, ♀. Japan.

*E Mus. Howard Saunders.*

*a*, ♂. Usern (*F. N. Donazien*). *b*, ♂, *c*, ♀. Valencia, November 8th. *d*, ♂. Valencia, September 17th. *e*, ♂, dark var. Valencia, October 25th. *f*, ♀, dark var. Valencia, October 2nd (*R. Martin*).

*E Mus. Salvin et Godman.*

*a*, ♀. Whittlesea, Cambridgeshire, March 1857. *b*, *c*, *d*, *e*, ♂, *f*, *g*, *h*, ♀. St. Michael's, Azores, March 1865. *i*, ♂. St. Michael's, May 1865 (*F. D. Godman*).

## Family TETRAONIDÆ.

### Genus LAGOPUS.

*Lagopus*, Brisson, Orn. i. pp. 181, 216 (1760).
*Tetrao* apud Linnæus, Syst. Nat. i. p. 275 (1766).
*Attagen* apud Kaup, Natürl. Syst. p. 170 (1829).
*Oreias* apud Kaup, tom. cit. p. 177 (1829).

The Ptarmigan inhabit the northern portions and the elevated mountain-ranges in the central parts of the Palæarctic and Nearctic Regions, five out of the six species known being inhabitants of the Western Palæarctic Region.

These birds frequent rocky mountainous localities, swampy mosses, and open heaths and country covered with cranberry- and blueberry-bushes and stunted brushwood. They are always found away from the forests, in the open country, and never perch on trees like the Grouse. They walk with ease, and when disturbed will squat and hide, or else take wing at once. Their flight is direct, strong, and well sustained; and when they rise they do so rather noisily. They feed on seeds, berries, and shoots of plants of various kinds. In the early autumn they are found in family parties or coveys; but later in the season they collect in large packs and ramble about the country in search of food. They are monogamous, and breed tolerably early in the season, their nest being a depression in the ground, very scantily lined; and their eggs, which are numerous, are pale olivaceous, richly blotched and spotted with dark brown. The young birds are able to run and hide almost directly they emerge from the shell.

*Lagopus mutus*, the type of the genus, has the bill short, stout, slightly curved, the upper mandible decurved, the edges sharp and overlapping, the tip thin-edged and rounded; nostrils oblong, basal, lateral, concealed by short feathers; wings short, broad, much rounded, the first quill shorter than the sixth, the third longest; tail moderately short, slightly rounded; legs rather short; tarsus and toes feathered to the claws; claws rather long, arched, depressed, the edges thin, the tips obtuse; plumage full, close, compact. All the species but one become white in the winter.




LAGOPUS MUTUS. Autumn plumage LAGOPUS RUPESTRIS.



COMMON PTARMIGAN.

LAGOPUS MUTUS

# LAGOPUS MUTUS.

(COMMON PTARMIGAN.)

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?*Tetrao mutus*, Montin, Physiogr. Sällsk. Handl. Lund, i. p. 155 (1776–86).
*Lagopus mutus*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 27 (1816).
*Tetrao alpinus*, Nils. Orn. Suec. i. p. 311 (1817).
*Lagopus vulgaris*, Vieill. Nouv. Dict. xvii. p. 199 (1817, partim).
*Tetrao montanus*, C. L. Brehm, Lehrb. eur. Vög. i. p. 448 (1823).
*Attagen*, Kaup (*Tet. montanus*, Br.), Natürl. Syst. pp. 170–177 (1829).
*Lagopus montanus*, C. L. Brehm, Vög. Deutschl. p. 516 (1831).
*Lagopus alpinus*, Nilsson, Skand. Faun. ii. p. 98 (1835).
*Tetrao rupestris*, Jenyns, Man. Brit. Vert. Anim. p. 171 (1835, nec Gm.).
*Lagopus cinereus*, Macgillivray, Hist. Brit. B. i. p. 187 (1837).
"*Lagopus mutus*, Leach," Bp. Comp. List, p. 44. no. 298 (1838).
"*Lagopus rupestris*, Leach," Bp. tom. cit. p. 44. no. 299 (1838, nec Gm.).
*Lagopus alpinus minor*, L. Brehm, J. f. Orn. 1860, p. 393.

*Lagopède muet*, *Gélinotte blanche*, French; *Lagopo bianco*, Italian; *Alpen-Schneehuhn*, *Felsen-Schneehuhn*, German; *Fjeldrype*, Norwegian; *Fjällripa*, Swedish; *Küruna*, Finnish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 494; Werner, Atlas, *Gallinacés*, pl. 7; Frisch, Vög. Deutschl. taf. 110, 111; Naumann, Vög. Deutschl. taf. 160. figs. 1, 2, taf. 161. figs. 1, 2; Sundevall, Sv. Fogl. pl. 35. figs. 1, 2, 3, 4; Gould, B. of Eur. pls. 253, 254; Roux, Orn. Prov. pl. 255; Bettoni, Ucc. Lomb. tav. 82; Elliot, Monogr. Tetr. pls. 21, 22; Gould, B. of G. Brit. iv. pls. 8, 9, 10.

♂ *ad. ptil. æst.* capite, collo et pectore nigris in collo vix albido immixto: mento albido: supra oculos maculâ nudâ coccineâ: dorso superiore nigro, et dorso imo, tectricibus alarum intimis nonnullis, scapularibus, uropygio et supracaudalibus nigricantibus ferrugineo vermiculatis et vix albido apicatis: remigibus albis, primariis rhachibus versus apicem nigro-fuscis: caudâ nigricante, rectricibus centralibus vix albido apicatis: pectore imo, abdomine et subcaudalibus albis, hypochondriis superioribus nigricantibus: rostro nigricanti-corneo: iride brunneâ.

♀ *ad. ptil. æst.* mari dissimilis: capite, collo, pectore, hypochondriis et corpore suprà nigricantibus ferrugescente ochraceo transfasciatis et vermiculatis, plumis singulis albido apicatis: alis et caudâ ut in mare: pectore imo et abdomine albis: subcaudalibus dorso concoloribus sed plumis albis immixtis.

*Ptil. autumn.* capite, collo, pectore superiore, hypochondriis et corpore suprà grisescenti-schistaceis nigricante transversim vermiculatis, capite et collo ochrascente ferrugineo tinctis: caudâ nigricante, albido apicatâ: alis, abdomine et subcaudalibus albis, remigibus primariis rhachibus versus apicem nigro-fuscis.

♂ *ptil. hiem.* albus, caudâ nigricante, albido apicatâ, loris nigris, remigibus primariis rhachibus versus apicem nigricantibus.

♀ *ptil. hiem.* mari similis, sed loris albis.

*Adult Male in breeding-plumage* (Maristuen, Norway, 7th June). Head, neck, breast, upper part of the back, and upper part of the flanks black, slightly intermixed with white on the neck; chin nearly pure white; over the eye a tolerably conspicuous vermilion comb; lower part of the back, some of the inner wing-coverts, scapulars, rump, and upper tail-coverts black, finely vermiculated with brown, and tipped here and there very narrowly with white; tail blackish, the central feathers narrowly tipped with white; wings, lower part of the breast, abdomen, and under tail-coverts white, primaries with the shafts dark brown towards the tip; bill dark blackish horn; iris brown. Total length about 15½ inches, culmen 1·05, from the nostril to the tip of the bill 0·4, wing 7·7, tail 4·8, tarsus 1·35.

*Adult Female in breeding-plumage* (Gaick, Inverness-shire, June). Head, neck, breast, flanks, back, rump, and upper tail-coverts blackish, closely marked, barred, and vermiculated with rusty yellow, and here and there tipped with white; wings and tail as in the male; lower part of the breast and abdomen white; under tail-coverts partly white, partly coloured like the back.

*Male in autumn* (Inverness-shire). Head, neck, upper part of the breast, flanks, back, scapulars, and upper parts generally slate-grey or ashy grey, narrowly vermiculated with black; head and neck tinged with reddish brown; tail blackish, tipped with white; wings, abdomen, and under tail-coverts white.

*Male in winter.* Entire plumage pure white, except the lores, which are black, and the tail, which is black, slightly tipped with white; primary quills with the shafts blackish brown towards the tip.

*Female in winter.* Resembles the male, but lacks the black lores.

Whilst the Red Grouse and the Willow-Grouse frequent the subalpine regions, the present species is found only in the mountains of Northern Europe and Asia, and also on the more elevated mountain-ranges of Southern Europe, but does not occur in the Nearctic Region.

In Great Britain it is now only known to inhabit the more elevated portions of Scotland, not being met with in Ireland or England, though formerly it used to occur in Cumberland. Mr. A. G. More (Ibis, 1865, p. 427) says that "Heysham describes the Ptarmigan as having become, in his time, very scarce in Cumberland; and he cites 'the lofty mountains about Keswick' as the only locality known to him. There is a tradition of its former existence in Wales; but I have not been able to discover the original authority for this statement." For the following information respecting the range of the present species in Scotland I am indebted to my friend Mr. J. A. Harvie Brown, who writes to me that "the Ptarmigan does not extend northwards into Orkney or Shetland. Sutherlandshire and Ross-shire are the strongholds of the species in the north of Scotland, especially the stony mountains of Assynt, on the ridge of Ben Chaorin (commonly called Harran), and on the heights and corries of Glashven, Ben Mhor, and Braebag; but it not found so numerously on those curiously shaped and isolated peaks lying nearer the sea, viz. Quinaig, Canishpe, Soulbhein (the 'Sugar-loaf'), Coul Mhor, and Coul Beg. In Ross-shire the Ptarmigan is abundant on Ben Wyvis in the east, and on the range of Ben Deraig in the west, but again becomes scarcer towards the coast. Southward through Ross-shire

and Inverness-shire, in all suitable localities, it is met with abundantly, preferring, however, as a rule, the larger masses of mountain land to the isolated peaks. Possibly a reason for this preference may be found in the fact that there are more sheltered corries and greater variety of feeding-ground in the former. In Aberdeenshire, on Lochnagar and Ben Muicdhui, they are found in abundance, but on the western mountains of the same range are comparatively scarce, in this case, however, owing to the nature of the mountain-summits—which are not so suited to their habits, being less stony, more deeply covered with moss, and not bearing mountain-berries in such quantities. In Skye they are found among the Cuchullin Hills, but not in great numbers, and in Harris and Lewis are comparatively scarce. Southward through Perthshire they are, generally speaking, scarcer, but in certain localities a fair number may be met with.

"I am indebted to Mr. James Lumsden, Arden, for the following note on the Ptarmigan in the neighbourhood of Loch Lomond. 'In this district,' he writes, 'the Ptarmigan has greatly decreased in numbers. There are still, however, a few birds to be found on Ben Lomond; and for several years one pair at least has nested there every season. On the Cobbler they are rather more plentiful, but are by no means common even on the rugged top. Occasional birds are met with on the hills above Luss; but they are only stragglers, the only breeeding-grounds I have ever heard of in the district being the two mountains above mentioned.'

"In Arran, as I am informed by the Duke of Hamilton's head gamekeepers in the north and south of the island, the Ptarmigan became nearly, if not quite, extinct about the year 1856. At all events none were observed in Arran after that date until fresh blood was introduced in 1867. This reintroduction was effected by bringing a few young birds from the north of Scotland. Since then the species has not steadily increased in numbers, nor is it considered likely that they will ever become very numerous, the mountain-ranges being of no great extent, and the whole area occupied by them being of inconsiderable size. Two years ago, however, some tourists saw no less than sixteen in one day, probably one or two coveys.

"As far as my experience goes, Ptarmigan, wherever they occur, are scarcer on the extreme summits of the mountains than at a lower elevation; and those shot upon the level deserts of stones in the higher and more exposed situations are found to be *smaller* birds. I know this to be the case in certain districts, not only from hearsay (*i. e.* information received from shepherds, gamekeepers, and others who are constantly amidst their haunts), but likewise from my own repeated observations, and from a comparison of specimens. So remarkable is this difference in size sometimes, that when on the wing these higher-ranging birds appear as pigmies compared with those found lower down. Moreover the smaller birds assume the winter dress much sooner and retain it longer.

"Writing to me upon the subject of our Scotch Ptarmigan, Professor Newton informed me that the above facts fully bear out similar observations made by him on the Ptarmigan in Norway. In 1834 Mr. Selby was under the impression that *Lagopus rupestris* (Gm.) had been obtained from the Ben-More range, in Sutherland. Professor Newton writes me that there can be little doubt that the mistake arose from the fact that the orange-yellow summer dress of the female *Lagopus mutus* was not at that time generally known to naturalists, but was supposed by them to be peculiar to the North-American species. Therefore when Mr. Selby's specimen was obtained, in full summer-plumage (I have had the pleasure of examining the bird, which is

now in Sir W. Jardine's collection), and when the orange-yellow plumage was remarked, the bird being 'smaller than the usual average size of the common Ptarmigan' (*Selby*) and therefore doubtless one of the said higher-ranging birds, it was erroneously referred to *Lagopus rupestris*. In my cabinet is one of these small birds, shot upon precisely the same ground where Mr. Selby's specimen was obtained; but, unlike his, it is in almost pure winter dress; laid beside another killed lower down on the same day (but which last is in almost perfect *autumn* or grey plumage), it looks quite a pigmy.

"In Norway, as soon as the snow melts and leaves bare the little rising grounds or knolls on the high fjelds above the birch-belts, the Ptarmigan, or 'Fjeld-rype,' begins to lay its handsome eggs in a little hollow scraped in the reindeer-moss, or partially concealed and sheltered by a low bush of the dwarf birch (*Betula nana*); in Scotland the end of May and beginning of June is the usual time chosen by them for breeding. In Scotland the nest is almost invariably partially sheltered from the prevailing wind by being placed close under the lee of a rock or lichen-covered stone. The number of eggs is usually from six to nine or ten; but sometimes more are laid.

"To ensure success in shooting Ptarmigan in the season, a certain amount of knowledge of their habits, and also of the ground they frequent, is necessary. Note should be taken of the direction of the wind, as they are almost if not quite as much influenced in the choice of their ground for the day as deer are by the changes in wind and weather. Bags of ten, fifteen, and even twenty brace may be made in the season in good localities by one who knows the ground and who knows also how to choose his day or days."

It occurs throughout Scandinavia in the more elevated districts; Mr. R. Collett says that "it breeds commonly on the fells, above the tree-growth, in all districts up to the Russian frontier, and is numerous on the Dovre- and Langfjeld down to Norefjeld, in Krydsherred and Hekfjeld, in 58½° N. lat. In the winter it visits the western districts in small numbers, but seldom, if ever, occurs in the southern lowlands." In Finland, according to Dr. Palmén (Finl. Fogl. ii. p. 44), "it inhabits only the northern districts, and is common on the fells bordering the Arctic Ocean, and at Enontekis, but rare at Muonioniska, Olostunturi, and Pallastunturi; Middendorff says that it is rarer on the eastern side of the Lapland peninsula, but it is found in very small numbers at Triostrow. In the wooded south-western portion it occurs only on the fell-tops, as, for instance, near the Imandra lake; but we cannot say whether it occurs on the Kuusamo Fell or not. Mr. E. Grape says that occasionally, during severe cold, flocks have come down even to Haaparanta, but this is now seldom the case." Mr. Sabanäeff informs me that he found it common in the Pavdinsk Ural, in Russia, but it is rare in the Kaslinsk and Ufalinsk Ural; Hoffmann met with it between 61° and 66° N. lat.

It appears only to occur elsewhere in Europe in the Alps and Pyrenees, not being, so far as I can ascertain, met with in any other portion of Europe. Lord Lilford tells me, "a few Ptarmigan are to be met with on the high Pyrenees of Aragon and Catalonia, and I am informed on good authority that this species is not uncommon on the high ranges of Asturias and Leon. We met with this bird near the Col de Tenda, in the Maritime Alps, and again on the Italian side of the Alps, in the neighbourhood of Cresole and Aosta, where it appeared moderately common." Baron J. W. von Müller (J. f. O. 1859, p. 75) says that he "found it in the Alps at Kasten, Kamor, Ebenalp, Schäfler, Mössmer, &c., and that it appears to inhabit all

portions of the Alps." According to Naumann (Vög. Deutschl. vi. p. 411), it is extremely numerous in Glarus, Graubünden, Appenzell, Tessin, and Unterwalden, as also on the St. Gothard and the Grimsel, less common in the Alpine regions of the Tyrol, Kärnthen, Styria, and Salzburg, and but rare in the high mountains of Austria and Würtemberg, where it is sometimes found as far as Nagold, on the edge of the Black Forest.

To the eastward the present species is found throughout Northern Siberia. Von Middendorff (Sib. Reise, p. 191) says that it was the only species of Grouse which is found as far north as the mainland extends in the Taimyr district, and in the winter it ranges southward at least as far as Turuchansk, in 66° N. lat. He did not personally meet with it in South-eastern Siberia; but he believes that it occurs in the Stanowoi Mountains. Dr. Radde (Reis. im Süd. von Ost-Sib. p. 295) says that he met with the present species, at an altitude of from 8800 to 9700 feet, when ascending the Munku-Sardik in June and July; and when ascending the Sochondo in July 1856, he saw several coveys at from 7500 to 8000 feet altitude. Dr. Dybowski says (J. f. O. 1873, p. 98) that it is much commoner in the Tunkisch than in the Baikal Mountains, and when on his way to the Kosogol lake he saw numbers above the limits of wood-growth. Messrs. Temminck and Schlegel seem to think that a Ptarmigan may occur in Japan, as they saw two figures of birds resembling the present species in a collection of Japanese drawings.

The Ptarmigan frequents the more elevated rocky and barren localities, where it replaces the Scotch Grouse and Willow-Grouse; and it seldom or never descends to the lowlands, where these latter species have their home, unless driven down by stress of weather in search after food. The tracts of ground over which it is distributed are much more extensive and more inaccessible than those lowland ranges which the Red Grouse and Willow-Grouse frequent; and hence the present species appears somewhat less numerous, though doubtless it is scarcely less so, at least than the Willow-Grouse. Should an intruder make his appearance in the range of the Ptarmigan, or when a bird of prey appears, they squat and remain motionless, trusting chiefly to the similarity of their plumage to the ground and the herbage to enable them to escape unseen. Should one utter his croaking note, he is generally on a stone ready to take wing at a moment's notice; and when he rises and calls, all the rest of the covey join him. So close do they squat, and so well does their plumage harmonize at all seasons of the year with the surroundings, that one may walk through a covey without being aware of the close proximity of a single individual. In the month of July, according to Macgillivray, and in October, according to Barth and other Scandinavian naturalists, the Ptarmigans begin to collect in packs and are found in lower altitudes than in the summer season. Barth (J. f. O. 1869, p. 93) says that "they then not unfrequently visit the sea-coast, and, being white, are very conspicuous; they appear quite bewildered, and easy to approach within gunshot, whereas when the ground is covered with snow they are shy, and take wing before one has arrived within any thing like gunshot-range. They fly tolerably swiftly, in a loose irregular body, their mode of flight resembling that of the Red Grouse, and when once on the wing will generally fly some distance before settling. Their call-note is a harsh croak, not unlike the cry of a frog, and it is frequently uttered as an alarm-call. The food of the present species consists chiefly of the tender twigs and leaves of *Empetrum nigrum*; but Macgillivray says that the crops of specimens he examined contained a large quantity of fresh green twigs of *Calluna vulgaris*, *Vaccinium*

*myrtillus*, and *Empetrum nigrum*, the largest fragments not exceeding five twelfths of an inch in length. Leaves and twigs of *Vaccinium vitis-idæa*, *Salix herbacea*, seeds of various *Junceæ* and *Cyperaceæ*, and other plants, with berries in autumn, also form part of their food, which is thus, in fact, for the most part, the same as that of the Red Grouse. The Grey Ptarmigan, then, is a bird which, feeding on vegetable substances containing comparatively little nourishment, introduces a large quantity at a time, like a ruminating quadruped, and gradually digests it while reposing. In feeding, it walks about among the shrubs and herbage, where it is little liable to be interrupted, so that it has time to select fragments of the proper size and quality. The food is collected in the crop, gradually pounded in the gizzard, where it is mixed with the solvent juice of the proventriculus, further diluted in the duodenum, and deposits the chyle along the intestine, whence it is carried off by the lacteals. As (perhaps on account of its being less nutritious than animal or farinaceous matter) it requires to pass rapidly along, the parts that have not been assimilated undergo a further elaboration and absorption in the very large cæca, which are appendages to the intestine, performing the same office as they, but into which the coarser fibres do not enter, being carried directly into the rectum."

The Ptarmigan breeds at great altitudes in the mountains, its nest being a mere depression in the soil, generally under shelter of a stone or low bush, and sparingly lined with grass bents or thin twigs; and the eggs closely resemble those of the Red Grouse—so much so, that I can give no character by which they can always be distinguished. As a rule, however, the markings are a trifle larger and bolder. So soon as the young are hatched they are able to run, and at the least appearance of danger hide with great celerity, and it is almost impossible to find them.

The present species is not by any means so suitable for the table as the Red Grouse; but large numbers are sent to our markets, especially during the winter season, when they come over from Scandinavia with Willow-Grouse. In Scotland the common Ptarmigan is by no means free from that scourge of the moors, the Grouse-disease; and Lord Lilford informs me that in his shootings in Inverness-shire they suffer from this disease quite as severely, in proportion to their numbers, as the Red Grouse.

The present species is the last of the Ptarmigans, or Grouse having feathered feet, found in the Western Palæarctic Region, there being altogether only six species known, viz.:—

*L. albus*, full particulars respecting which are given in the present work. It inhabits the lowlands of the Northern Palæarctic and Nearctic Regions.

*L. scoticus*, which is restricted to Great Britain.

*L. mutus*, full particulars respecting which are given above.

*L. rupestris*, which inhabits Greenland, Iceland, and Arctic America, particulars as to its range being given in the present work. I find that there is another name, which is probably a synonym of this species, viz. *Lagopus dispar*, Ross, Voy. of Disc. ii. p. 168 (1819). Ross describes the male as "white," and the female as "variegated white, black, and rusty rufous," and says that a few were seen in the Waygat and in Jacobs's Bight.

*L. hemileucurus*, which inhabits Spitzbergen only. When Mr. Sharpe and I figured and described this species in a former part of the present work, we laid great stress on the large amount of white on the tail. Since then I have examined a far larger series, both of this and other Ptarmigans, and find that the difference in size is perhaps the best character, as Mr. A. B. Brooke has sent me several specimens of *Lagopus mutus* from the Pyrenees for examination, one of which has quite as much white

on the tail as many specimens of *L. hemileucurus*, though otherwise it closely resembles Scotch-killed Ptarmigan. I may add, however, that out of a large series of skins this single specimen is the only one I have seen with so much white on the base of the tail-feathers, and the other two Pyrenean specimens agree closely with examples of *L. mutus* from other parts of Europe. Judging from the specimens lent to me lately by Professor Newton, the Spitzbergen Ptarmigan is, on an average, much larger in size than either *L. mutus* or *L. rupestris*, as will be seen from the table of measurements given below. Unfortunately the specimens collected by Dr. von Heuglin, and examined and measured by my late colleague in the preparation of our article on *L. hemileucurus* are not now at hand for comparison with the series I now have before me, which is the more unfortunate as the measurements there given are much smaller than those of specimens sent to me by Professor Newton; but Dr. O. Finsch (Zweite deutsche Nordpolfahrt, ii. p. 199) gives the measurements of the specimens collected by Von Heuglin as wing 8·6–8·9 inches, tail 5·6–5·9, and hence, I fear, there is a mistake in the measurements given in our former article above referred to.

*L. leucurus*, Swainson (Faun. Bor.-Am. ii. p. 356, pl. lxiii. 1831), differs from all other Ptarmigan in having the tail white. Professor Spencer F. Baird gives its range as "Northern America to the west; southward along Rocky Mountains to Cochetope Pass, in latitude 39°."

The following is a list of measurements of those species of Ptarmigan which are most closely allied to each other:—

| | | Culmen. inch. | Wing. inches. | Tail. inches. | Tarsus. inches. |
|---|---|---|---|---|---|
| *L. hemileucurus* . . . | King's Bay, ♂. | 0·81 | 9·0 | 6·1 | 1·9 |
| „ . . . | do. ♀. | 0·8 | 8·7 | 5·9 | 1·87 |
| „ . . . | do. | 0·9 | 9·1 | 6·5 | 2·0 |
| „ . . . | Wyde Bay. | 0·9 | 8·8 | 6·2 | 1·92 |
| *L. rupestris* . . . . | Iceland. | 0·93–0·95 | 7·5–7·85 | 4·75–5·25 | 1·2 –1·35 |
| *L. mutus* . . . . . | Scotland. | 0·95–1·0 | 7·5–7·6 | 4·55–4·8 | 1·3 –1·4 |
| „ . . . . . | Pyrenees. | 0·98–1·1 | 7·2–7·6 | 4·6 –4·8 | 1·25–1·37 |
| „ . . . . . | Italy. | 0·8 | 7·8 | 4·6 | 1·6 |
| „ . . . . . | Norway. | 1·0 | 7·6–7·7 | 4·7 –4·8 | 1·3– 1·35 |

The specimens figured are, on one Plate, an adult male and female in full breeding-plumage, the autumn-plumaged bird being figured on the same Plate with *L. rupestris* in the same dress; and the winter plumage is depicted on the same Plate with the winter-killed specimen of *Lagopus albus*. The specimens figured are those described, excepting the autumn-plumaged example, which I chose as being less grey and more nearly approaching *L. rupestris*; and all are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Clash-na-Darroch, Inverness-shire, September (*H. J. Elwes*). *c*, *d*, *e*. Inverness-shire (*H. Barclay*). *f*, ♂. Maristuen, Norway, June 7th, 1871 (*J. A. Harvie Brown*). *g*. Gudbrandsdalen, Norway, November 1870 (*Collett*). *h*, ♂. Porsangerfiord, Finmark, July 9th, 1872 (*Collett*).

*E Mus. Lord Lilford.*

*a*, ♂, *b*, ♀. Gaick forest, Inverness-shire, June 1867 (*L.*).

*E Mus. Harvie Brown.*

*a*, ♂. Isle of Skye, November 1869.

*E Mus. H. B. Tristram.*

*a*. Leadenhall Market, London.

*E Mus. E. Hargitt.*

*a*, ♂, *b*, ♀. Cluny Forest, Ross-shire, May 25th, 1871.

*E Mus. A. B. Brooke.*

*a*, *b*, ♂, ♀ *ad.* Luz, Hautes-Pyrénées, April 27th. *c*, ♀. Luz, May 27th, 1872 (*A. B. B.*). *d*. Italy (winter plumage) (*Doria*).

RED GROUSE.
LAGOPUS SCOTICUS
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# LAGOPUS SCOTICUS.

(RED GROUSE.)

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*Lagopus bonasa scotica*, Briss. Ornit. i. p. 199. no. 5 (1760).
*Tetrao lagopus*, var. γ, Gm. Syst. Nat. ii. p. 750 (1788).
*Tetrao scoticus*, Lath. Ind. Orn. ii. p. 641 (1790, ex Briss.).
*Tetrao saliceti* (*æstate*), Temm. Man. d'Ord. 1st ed. p. 296 (1815); Pig. et Gallin. iii. pp. 208–217 (*æstate*) (1815).
*Lagopus scoticus*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 27 (1816).
*Lagopus scoticus* (Lath.), Vieill. Nouv. Dict. xvii. p. 206 (1817).
*Tetrao scoticus*, Lath., Temm. Man. d'Orn. ii. p. 465, iv. p. 321 (1820).
*Oreias*, Kaup (*Tetrao scoticus*, Lath.), Natürl. Syst. p. 177 (1829).
*Tetrao saliceti scoticus*, Schlegel, Rev. Crit. pp. lxxvi, 89 (1844).

*Red Grouse*, *Moor-fowl*, *Muir-fowl*, *Muir-cock*, *Gor-cock*, *Red Ptarmigan*, English; *Coileach-fruoch*, *Cearc-fhraoich*, Gaelic.

*Figuræ notabiles.*

Gould, B. of Eur. pl. 252; id. B. of G. B. iv. pl. vii.; Werner, Atlas, *Faisans*, pl. 6; Daniel's Rural Sports, iii. pl. to p. 106; Elliot, Monogr. Tetr. pl. xix.; Fritsch, Vög. Eur. pl. 30. fig. 5; Sundevall, Sv. Fogl. lxiii. fig. 3.

♂ *ad.* nigricanti-brunneus, castaneo vel rufescente transversim vermiculatus: capite, collo et uropygio rufescentioribus: remigibus nigricanti-brunneis: caudâ nigricanti-brunneâ, rectricibus centralibus rufescente vermiculatis: suprà oculos carunculâ nudâ coccineâ, lineâ a maxillâ et plumis suprà et infrà oculos albis: gutture et pectore superiore lætè ferrugineis: abdomine vix albido notato: tibiæ et tarsi plumis grisescenti-brunneis: rostro corneo: unguibus albicanti-corneis: iride brunneâ.

♀ *ad.* mari similis, sed minor, ubique pallidior, suprà ochrascenti-brunnea vix ferrugineo lavata et transversim nigricante brunneo vermiculata: plumis nonnullis ochrascente brunneo apicatis: maculâ supraoculari minore quam in mare: subtùs pallidior nec ferruginea sed saturatè ochrascenti-brunnea ubique nigricante brunneo vermiculata.

*Adult Male in spring* (Scotland). Upper parts blackish brown, narrowly vermiculated with reddish brown, head, neck, rump, and upper tail-coverts more rusty red in tinge than the rest of the upper parts; quills uniform blackish brown; tail blackish brown, the central feathers vermiculated with rufous brown, over the eye a warty red comb, feathers over and under the eye, and an irregular line on each side from the base of the lower mandible white, neck to the upper part of the breast rich dark rusty red, rest of the underparts blackish brown, more or less vermiculated with dark rusty red, and a few of the feathers on the abdomen tipped with white; legs covered to the claws with hair-like feathers, dull greyish or brownish on the tibiæ, but merging into dirty white towards the feet; beak dark horn; claws light greyish horn; iris hazel. Total length 15·5 inches, culmen 0·85, wing 8·2, tail 4·2, tarsus 1·8.

*Adult Female* (Otley, Leeds). Differs from the male in being lighter in colour, somewhat smaller, and lacking the rich rusty or chestnut colour on the neck and breast; the entire plumage is yellowish brown, with a reddish tinge, barred and vermiculated with blackish brown, many of the feathers, especially on the back, having yellowish brown apical spots; the supraocular comb is much smaller than in the male, and scarcely visible in some specimens. Total length 14 inches, culmen 0·85, wing 7·5, tail 4·1, tarsus 1·8.

*Young*. Young birds in winter show much more white about the eyes and beak, and on the lower breast and belly, than the adults; they also have *white* lesser under wing-coverts, whereas in old males these feathers are often dark brown. Old males are usually darker and more uniformly coloured than their younger brethren; and all are much darker in winter than in summer.

*Obs*. The Grouse differ somewhat in colour according to locality. Judging from the series I have before me, I consider that those from Scotland are somewhat the larger, and considerably darker in colour. Those from the north of England are more rufous; and the Irish bird is considerably the lightest, and has a yellowish red tinge in the plumage; the feathers on the legs are also darker and browner than in any of the other specimens. I have no specimens from Wales, where they are said to be small and very light-coloured. As regards size, five specimens I have measured vary as follows :—

| | Culmen. inch. | Wing. inches. | Tail. inches. | Tarsus. inch. |
|---|---|---|---|---|
| ♂. Scotland | 0·9 | 8·0 | 4·7 | 1·8 |
| ♀. do. | 0·8 | 7·8 | 4·3 | 1·8 |
| ♂. Yorkshire | 0·85 | 8·2 | 4·2 | 1·8 |
| ♀. do. | 0·85 | 7·5 | 4·1 | 1·8 |
| ♀. Ireland | 0·8 | 7·9 | 4·3 | 1·85 |

This the Common Grouse of our islands is peculiar to Great Britain, and, excepting that it has to some extent been domesticated in Sweden, occurs in no other part of the globe. Not only is it, as its specific appellation implies, found in Scotland, but it is numerous in many parts of England and Ireland, though not so common as it is in Scotland, where the Grouse-moors have of later years proved a source of no small emolument to the Scottish landowners; for in spite of the Grouse-disease, which has thinned their numbers very materially, the high rents paid by wealthy Englishmen for Scotch moors do not appear to have at all diminished, and a Grouse-moor is as essential to the fashionable Englishman of the present day, who at all cares for shooting, as a box at the opera is to the lady of fashion of the present period. In Scotland the Grouse is abundant in almost all localities where the heather, whether *Calluna vulgaris* or *Erica cinerea*, is found, both in the lowlands and in the moors, at a considerable altitude above the sea-level. Mr. Robert Gray (B. of W. of Scotl. p. 234) writes that "throughout Western Scotland the Red Grouse is widely distributed, being found on all our moors, ranging from the base of the highest mountain-peaks down to the patches of heath that skirt the saltwater lochs of the Outer Hebrides. It is found in almost the whole of the islands of both the inner and the outer group, being common in Islay, Mull, Skye, Rum, and Jura, where the species is said to be increasing. It is also tolerably abundant in Lewis, Harris, North and South Uist, and Barra. All the birds I have examined from these wild wastes appeared to be quite free of disease; but as a rule they may be said to be smaller and lighter in colour than those from moors on the

mainland, especially the mountain-ranges of the north-east of Scotland, which invariably yield, in good seasons, the largest and most beautifully marked Grouse. In many districts the native Grouse partake of the coloration of the ground in their markings; thus the finest and darkest birds are those frequenting rich heathy tracts, while on broken ground of a rocky character, such as may be seen in the south of Wigtownshire, the Grouse are either more or less mottled, or are altogether lighter in colour, and less in size and weight. Accidental varieties likewise occur. I have seen specimens of Grouse that were wholly of a pure buff colour; the pair of the kind I examined were shot near Forres, in October 1867, and had for some time previously been marked objects on the moor were they were killed. I have found the nest of this species at various elevations in localities where the heather grows in luxuriance, from the shoulder of the highest hills to the low slopes, almost touching the margin of some of our sea lochs. I remember finding two nests in the island of Bute in 1867 (a year of disease and great mortality) about ten yards from highwater mark; and some of my correspondents send me similar records from other parts of the country. The food of the Grouse, though consisting, as is well known, of young heather shoots and various alpine plants, is often varied by farm produce, especially oats—a grain which is frequently sown on reclaimed patches of land near its haunts. In Wigtownshire I have observed large numbers frequenting even stubble and turnip fields. On 29th September, 1870, when driving from Glenluce to Portwilliam, I noticed upwards of thirty Grouse perched on a stone wall dividing two fields in the immediate neighbourhood of a moor. This was late in the afternoon, just as the dyke was being tipped with the warm hues of approaching sunset; and the birds sat in a line, with a curiously regular space between each. None of them appeared to take notice of the conveyance as it went past; and on looking back and keeping the wall steadily in view for some minutes, I saw eight or ten more birds flying in their direction; so that, in all likelihood, the assemblage would increase as the evening advanced. On mentioning the circumstance to a friend at Portwilliam, I was informed that this habit of settling on stone walls is not uncommon in that district, as that as many as forty to fifty Grouse are frequently seen ranged on such perches. Poachers, who are aware of the habit, take a raking shot at them as they sit, and often in this way secure three or four brace at a single discharge." In England the Grouse inhabits various parts of the northern, central, and western counties, where the moors are still remaining and not opened up by the plough. Mr. A. G. More (Ibis, 1865, p. 427) states, on the authority of Colonel Newman, that it is plentiful on the hills of Monmouthshire, and further records it as "inhabiting Hereford, Shropshire, Stafford, Radnor (*Mr. Rocke*), and Pembroke (*Mr. Tracy*). Breeds in Derbyshire, Lancashire, Yorkshire, and in every county north of lat. 54°, reaching the Outer Hebrides and Orkneys, but not occurring in Shetland." It is found in Ireland, where, according to Thompson (B. of Irel. ii. p. 47) it "is common throughout the extensive heathy tracts in Ireland and adjacent islets. It has been remarked to me by sportsmen, that the Grouse of Ireland and Scotland differ in size and colour. This is apparently correct when birds of a certain district are compared with those of another; but it is, in my opinion, a partial view of the subject, as, in different localities throughout either the one country or the other, birds will be found equally to vary in these respects. The following observations strikingly illustrate this opinion:—A friend who shot over the moor of Glenroy, Inverness-shire, in 1844, observed that the Grouse differed much in their plumage, and were of three varieties, each kind

keeping particularly to its own quarters. On the darkest and most heathy ground were the darkest birds and the largest, weighing generally 2 lb., and sometimes 2 lb. 2 oz. On the rocky parts they were of a very much lighter brown, while on the stony and heathy ground combined they were of an intermediate brown, mottled more or less with white."

The habits of the Grouse have been so repeatedly described by the various writers on British ornithology, and are so well known to every true sportsman, that but little is left to record. It is a true frequenter of the open treeless moors, never perching, and living entirely on the ground like its close relative the Willow-Grouse of Northern Europe. It is shy, and by no means easy to observe and study, as it conceals itself closely amongst the dense heather-growth, skulking concealed until one gets within a fair distance of it, and then flies away with a whirring sound, flying low and heavily, uttering its loud call (*kok, kok*) as it starts up.

Mr. Alston writes to me that "the 'covies' unite into large 'packs' sooner or later in the season, according to the district and the weather, and are then almost unapproachable; in the south of Scotland Grouse often pack very early in the shooting-season. Early on frosty mornings the cocks are fond of perching on a 'know,' or hillock, and uttering ther clear ringing '*Er-eck-kek-kek! wuk! wuk! wuk!*' At such times they may often be seen to rise perpedicularly in the air to a height of several feet, and then drop again on the same place."

I am indebted to my friend Mr. H. Seebohm, of Sheffield, who has closely studied the habits of this species, for the following notes on its habits, as observed by him in Derbyshire:—"The moors on the Derbyshire side of Sheffield are well stocked with Grouse. They are hilly tracts of country, for the most part nothing but peat and rock, the former profusely covered with ling. They abound in springs, which form mountain-streams in the narrow gorges, or produce bogs in the wider valleys and plateaux, where the ling is often overpowered with a rank growth of rushes, carices, and coarse grasses. The rocks are a kind of millstone grit, and sometimes appear as huge isolated masses, but more often as a range of perpendicular cliffs, locally called edges. The peaks and ridges above these cliffs sometimes rise to an elevation of 1700 feet or more above the level of the sea.

"Of course these moors are very strictly preserved; and the only way to ornithologize upon them with any comfort is to make friends with the gamekeeper. These men are generally very zealous in looking after their employer's interests, and are indefatigable in pursuing trespassers and hunting down all sorts of vermin. Weasels, stoats, magpies, and jays are trapped, and ignominiously nailed on to the rail or fastened on to the wall which forms the gamekeeper's museum of trophies. They undoubtedly deserve their fate, if the sucking of the eggs or the devouring of the young of the sacred Grouse constitutes a capital crime. The Carrion-Crow and the Rook are perhaps greater criminals; but their extra cunning enables them to escape their due share of punishment. When the young Grouse begin to run, the Sparrow-Hawk, the Martin, and, occasionally, a Harrier are special objects of the gamekeeper's care. The greater number of these Hawks are shot off every year, generally when they have young of their own, and can be more easily approached within gunshot; but every spring brings a fresh supply. The gamekeeper's museum would, however, be but thinly stocked with Hawks did he not eke out their number with a goodly row of Kestrels, Cuckoos, and Nightjars. It is melancholy to contemplate the wholesale slaughter of these innocent and charming birds. I used to think the

gamekeepers shot them to impose upon their masters, and gain credit for the numbers of game these monsters would have destroyed; but I am now persuaded that they devoutly believe in the destructive propensities of all these birds, and that no argument will convince them to the contrary.

"The Grouse is an early breeder. In the sheltered lower grounds I have heard of eggs having been seen before the end of March. On the high grounds I have frequently seen eggs unhatched in June. In some seasons a sudden fall of snow has been known to cover the ground to such a depth that the poor Grouse have been unable to find their nests; and after such storms the gamekeepers pick up eggs here and there, which, as they express it, have been 'laid wide.'

"The situation of the nest varies. The nest is always placed on the ground, usually in the long heather, often near a clump of very tall ling, or near a protruding rock. The edge of a patch of moor where the heads have been burnt off a year or two ago is a favourite place, or an oasis of heather, which has escaped the general conflagration, is a still more likely locality to find the nest of a Grouse. The motives which guide them in their choice of a site for their nest seem to be merely the selection of a place where the bird and eggs will be concealed and sheltered by the long heather, and one that can easily be recognized by themselves.

"The Grouse can scarcely be said to make a nest. It merely scratches a slight hollow on the ground; and such material, twigs of heather, dry moss or grass, leaves, &c., as happen to be on the spot, are allowed to tumble in as lining. The Grouse has never been known to cover its eggs before leaving the nest, as the Pheasant and Partridge are in the habit of doing.

"The number of eggs laid by the Grouse seems to vary with the propitiousness or otherwise of the season. In very wet and cold springs the smallest clutches will be from four to five, and the largest from eight to nine, whilst in very favourable seasons the small clutches will be from six to seven, and the larger ones from ten to twelve, or even fifteen and seventeen; but in the latter cases it is probable that the eggs may not all be the produce of one bird. In an average year most nests will contain from seven to eight eggs. Birds which breed late on the high grounds do not seem to lay fewer eggs than those which breed early in the more sheltered situations.

"The Grouse does not easily forsake her eggs. You may watch her daily as she sits upon them; you may even catch her eye without frightening her away. You may send her off *cok-cok-cok-cokking* in alarm, by accidentally almost stumbling over the nest; and you may handle the eggs without much danger of causing her to 'forsake.' Gamekeepers are always very anxious to impress upon trespassers the fact that it is of the utmost importance not to disturb the birds during the breeding-season. The real truth is, that, if strangers were allowed on the moors at this season of the year, the danger would be, not that the birds would forsake the eggs, but that the eggs would forsake the birds.

"The eggs of the Grouse are not subject to much variation. They are usually $1\frac{30}{40}$ inch long by $1\frac{13}{40}$ broad, and are of an almost uniform oval shape, the smaller end being scarcely more pointed than the larger end. Exceptions to this rule, however, are occasionally met with. Towards the end of May 1864 or 1865 (I remember it was Derby-day) I took a nest of Grouse, during a heavy snow-storm, containing five eggs, which would probably have hatched the following day. They measure $1\frac{33}{40}$ inch by $1\frac{9}{40}$; and, as might be expected in eggs which were longer and

narrower than usual, they are much more pointed at the small end than is usually the case. The ground-colour of the egg of the Grouse is usually a pale olive, spotted and blotched all over with dark red-brown. The spots are frequently so confluent as almost entirely to conceal the ground-colour. In fresh-laid eggs the brown is often very red, in some instances almost approaching crimson. It appears to darken as it thoroughly dries, and sometimes almost approaches black. When fresh-laid the colour is not very fast; and before the eggs are hatched the beauty of the original colouring is generally very much lessened by large spots coming off altogether, no doubt from the friction of the feathers of the bird when sitting. If the weather is wet when the bird begins to sit, this is much more the case. When the colour has once become thoroughly dry, it will bear washing in water without injury. The colour of the eggs is admirably adapted for the purpose of concealment from the prying eyes of Rooks, Crows, and birds of prey, being very much like the mixture of moss, lichens, and peat where they are laid. Most of the eggs laid come to maturity. I once asked a gamekeeper to watch half a dozen nests which were near his house. He told me that out of forty-nine eggs he counted forty-seven chicken Grouse.

"As soon as the young are hatched, especially in dry seasons, the hen takes her brood down to the more swampy parts of the moor. Unlike the Black Grouse, whose remote ancestors appear to have embraced Mohammedan views on this point, the Red Grouse is a strictly monogamous bird, and remains paired all the year round. While the hen is sitting her mate is generally not far off, and gives the alarm by flying off at the approach of supposed danger, uttering his loud *kok*, *kok*, *kok*. It would appear that the cock does not take his turn at the duties of incubation; but when the young are hatched both parents wait upon them.

"The food of the Grouse is chiefly the flowers and young shoots of the ling; the capsules of carices are also often found in their crop. Were it not for the sportsman, the Grouse would live a very quiet life on his native heath, as much so as the poultry on the farms in the valley. He does not migrate in spring or autumn. His utmost excursion is confined to an occasional raid into the nearest farms when food is scarce. In very severe and long-continued frost and snow I have known isolated instances of Grouse being caught in the streets of Sheffield.

"The Grouse is not generally a conspicuous bird on the moors. You may often drive for miles without seeing more than one or two. In an evening you may sometimes see three or four sitting on a stone wall; but for the most part they live upon the ground. I never but once saw a Grouse in a tree; and then it had flown across a broad valley and alighted in a wood. It seemed so little at home, that it remained with its wings partially expanded and assisting to support itself by the adjacent twigs until I came up, when it flew away.

"Grouse-shooting begins on the 12th of August. In average seasons there will then be but few 'cheepers' (birds whose parents have been disturbed in their first nests and have bred again). At the same time most of the young birds will not be so strong on the wing as to prevent the second-rate shots from making a bag.

"The moors in the neighbourhood of Sheffield sell at from 40*l.* to 50*l.* per acre. This value is almost entirely derived from the Grouse. On some moors a few sheep are seen for the summer; but many are entirely devoted to Grouse. For the first few days Grouse are shot over dogs, pointers, or setters. A good shot, on a good moor, will bag his twenty-five to thirty-five

brace the first day. In a short time the birds become very wild, generally rising beyond range. They also 'pack' on the high grounds, especially before stormy weather. The Grouse-shooters then resort to driving. The guns are partially concealed in erections made of turf, and the birds in the next valley are driven by the gamekeepers and their assistants over the brow of the intervening hill. In the thick of the drive the shooting is fast and furious, and enormous bags are sometimes made. Grouse-driving is excellent sport for the mere marksman, requiring a very quick hand and a very accurate eye; but a more sportsmanlike occupation is Grouse-stalking. The moors are interspersed in many parts with narrow winding valleys, locally called 'groughs,' where you may often get a chance shot at a Grouse, when you have learnt where to look for him. Nothing is more delightful than to stroll up these groughs in spring, on the edges of the streams which generally run down them. The sloping banks are a favourite breeding-place of the Ring-Ouzel; sometimes a chance Black Grouse nests in a quiet corner; the Twite is generally to be seen; and, strange to say, the Grasshopper Warbler may often be heard. In the lower ground you may often 'flush' a Snipe; and as you emerge from the grough, on the higher plateaux you are not unlikely to come upon a Curlew or two, or a party of Golden Plovers; and if you are lucky, you may drop upon their nests. In early spring you may chance on a small flock of Dotterel, resting on the hills during their migrations; but of course the Grouse remains always the bird *par excellence* of the moors."

During the last few years the Grouse have greatly decreased in numbers, owing to a disease the exact nature of which appears still to be to some extent undecided, but which by various authorities has been referred to a variety of causes; and the numerous letters to the 'Field' and other sporting newspapers clearly show the interest taken in the subject by most sporting men. Some have given it as their opinion that the plague is caused by excessive interbreeding; others put it down to overcrowding, underfeeding, "battery shooting," and other equally varied causes. Canon Tristram ascribes it in part to the excessive extermination of the birds of prey, which, feeding on the weaker birds, act as a sort of sanitary police by preventing these from transmitting their weaknesses to the next generation. The most reasonable theory is given by Dr. Spencer Cobbold, who, in a pamphlet lately published on the subject, gives it as his opinion that it is caused by internal parasites which, in the struggle for existence which is one of the great laws of nature, have gained the upper hand. He is careful to state that the mere presence of internal entozoa does not necessarily result from a vitiated state of the body of the birds, as many healthy specimens may and do contain these internal parasites to a certain extent. He states that two species of entozoa are concerned in the production of the Grouse-disease, the one being the Grouse tapeworm (*Tænia calva*, Baird), and the other the Grouse-strongle, which he has provisionally named *Strongylus pergracilis*, it being, he believes, new to science. After having carefully examined four diseased Grouse, he writes as follows:—"Examples of this new parasite occupied the whole length of both of the intestinal cæca. They were present in greater or less abundance in all four of the birds. The male parasite gave an average of one third of an inch length, the females extending up to three eighths of an inch, or rather more. The latter had their oviducts crowded with eggs arranged in single file, displaying various stages of yolk-segmentation; but I did not notice any fully formed embryos. It may afford some notion of the extraordinary abundance of these nematode entozoa, when I state that from less than a

teaspoonful of the cæcal contents I obtained many hundreds of specimens. I am confident that no one of the four Grouse contained less than a thousand examples; and I believe that one of the more diseased and emaciated birds contained fully ten times that number." Referring to the presence of tapeworms and strongles in both healthy and diseased birds, he says that "the only difference between impoverished and healthy Grouse in this latter respect appears to have been, that in the case of the birds out of condition we encountered a relatively larger number of these nematode worms. It is merely the difference between thousands and tens of thousands; but this disparity, if considered in association with the varying strength of constitution of individual avian bearers, will be amply sufficient, in my opinion, to account for either impoverishment or retention of health, as the case may be. That in some seasons the tapeworms may acquire ascendancy, and thus become the sole cause of mortality amongst the Grouse, is quite possible; and under any circumstances their presence would be likely to aggravate a disorder, whether the latter be proven to be due to another form of parasitism, or to disease arising from causes altogether independent of entozoal infection. In the present epidemic, I believe the disease to be entirely due to parasites."

Dr. Cobbold points out that the presence of the Grouse-disease does not make the birds unfit for the table—a most necessary remark,—although, after reading the elaborate and careful details he gives of the disease, I should have as little appetite for a dish of Grouse as I have felt for sausages after having heard one of his graphic lectures on the internal parasites of the human body; for I have generally left feeling that I was most unwillingly harbouring a small army of these unpleasant lodgers. The learned doctor himself proved the above assertion as to the fitness for culinary purposes of diseased Grouse, by partaking of portions of the diseased Grouse he had previously dissected. He says that "both birds were eatable, there being no new or disagreeable flavour attached to either," but that "one of them was comparatively dry and insipid."

As yet no cure appears to have been found for this fell disease; but should it in time become better understood, it is probable that some means may be found to, at least, alleviate it, or prevent its further spread; for so severe has been the pestilence that some moors have been so decimated as to render the shooting over them, for some seasons at least, almost out of the question. At the commencement of the present season I was told by the poulterers in Leadenhall Market that they had never known so short a supply of Grouse, caused, as they believed, solely by the Grouse-disease.

Mr. Seebohm, writing to me respecting the habits of the Grouse, says, speaking of the diseased birds, that "they become thin and out of condition, and are frequently picked up dead. This disease generally appears in spring, when the Grouse are sitting. The cause of it has given rise to much controversy. The birds which have died of the disease are frequently found, when dissected, to be infested with a small parasitic worm in the intestines. Some sportsmen maintain that these parasites are the cause of the weakness and subsequent death of the Grouse. Others, on the other hand, assert that the abundance of parasitic worms is only a symptom of, and caused by, the diseased state of the bird. Grouse, in common with other animals, are subject to the attacks of two species of parasitic worms. The long species does not appear to be particularly injurious. So far as I have been able to learn, it attacks principally the young birds. It is not an uncommon thing on the Sheffield moors to shoot fine plump young Grouse with four or five

inches of tapeworm hanging from them. The cause of the prevalence of these most injurious parasites is probably insufficient or improper food. In early spring (*i. e.* during the breeding-season) Grouse seem to require the young shoots of the heather as food to keep them in a healthy condition. It sometimes happens that these young shoots or buds are nipped by a late frost, which turns them all brown. It has been frequently observed that upon moors where such has been the case the Grouse-disease has soon made its appearance. Upon some moors the Grouse-disease has doubtless been caused by the young shoots of the heather having been eaten off by sheep, so that there has not been sufficient left for the Grouse. On other moors the same result has happened from an overstocking of the birds themselves. It is obviously of great importance to the health of the birds that the moors should neither be overstocked with Grouse nor sheep. The preserving of Grouse upon the moors is a more artificial arrangement than at first sight it appears. It is true that we thin them pretty effectually during some months of the year, after the 12th of August, when the chance of scarcity of food is over. Nature's Grouse-shooting, on the other hand, begins some months earlier. Before the spring food has scarcely made its appearance, she sends her migratory Hawks to the moors. Should any disease show itself because the Grouse were too many for their food, the birds of prey would doubtless soon stamp it out, removing at once cause and effect.

"Some gamekeepers assert that Grouse-disease is an affection of the liver, caused by long-continued cold and rainy weather in spring; but the probability is that the seat of disease, where such exists, is rather in the lungs. This year (1873) has been a bad year for Grouse on the Sheffield moors. Towards the end of May a great many dead birds were picked up in an emaciated condition. Some of these were carefully dissected by Mr. B. Cartledge, a well-known veterinary surgeon in the town. He pronounced the cause of death to be in all cases chronic inflammation of the lungs. Many of them had the long tapeworm in the intestines; but he did not detect the smaller parasitic worm."

Respecting the variation in the weight of Grouse, Mr. E. R. Alston writes to me as follows:—"Red Grouse vary much in their weight in different districts. They are usually heavier towards the end of the season—a fact probably due to the reduction of the insensible perspiration (*cf.* White's 'Selborne'). In the Upper Ward of Lanarkshire I have found the average weight in August to be between twenty-one and twenty-two ounces, whereas in October it was over twenty-three ounces. Males are much heavier than females. I have a note of an old cock killed in November which weighed *twenty-eight* ounces, and a hen, shot the same time, *twenty-four* ounces."

Eggs of the Grouse in my collection are undistinguishable from those of the Willow-Grouse either in colour, shape, or size. Mr. Seebohm gives above so excellent a description of the eggs of this species, that I need add nothing further on the subject, except that, as a rule, those of the Red Grouse are rather the redder and darker of the two.

The specimens figured and described are in the collection of Mr. F. Bond.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *b*, ♂. Clash na Darroch, Scotland, October 1867 (*Elwes*). *c*, ♀. Aboyne (*J. Waters*).

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*E Mus. F. Bond.*

*a*, ♂. Scotland. *b*, ♂, *c*, . Otley, near Leeds, December 9th, 1868 (*F. B.*).

*E Mus. A. B. Brooke.*

*a*, ♀. Colebrooke, co. Fermanagh, Ireland, December 13th, 1871 (*A. B. B.*).

*E Mus. J. H. Gurney, jun.*

*a*, ♂. Clash na Darroch, Scotland, October 1871 (*Elwes*). *b*, ♀. Scotland, December 21st, 1867. *c*, ♀. Bridlington, Yorkshire (*Jones*). *d*, *pull.* Wolsingham, July 26th, 1868. *e*, *f*, *pull.* Yorkshire (*Jones*).




ROCK PTARMIGAN.



1/2

ROCK PTARMIGAN.

LAGOPUS RUPESTRIS

# LAGOPUS RUPESTRIS.

(ROCK-PTARMIGAN.)

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*The Rock-Grouse*, Penn. Arct. Zool. ii. p. 312. no. 184 (1785).
*Tetrao rupestris*, Gm. Syst. Nat. i. p. 751 (1788, ex Penn.).
*Tetrao lagopus*, Sabine, Trans. Linn. Soc. xii. p. 530 (1818).
*Tetrao islandorum*, Faber, Prodr. isländ. Ornith. p. 6 (1822).
*Tetrao islandicus*, C. L. Brehm, Lehrb. Eur. Vög. i. p. 440 (1823).
*Lagopus reinhardtii*, C. L. Brehm, tom. cit. p. 986 (1823).
*Tetrao* (*Lagopus*) *mutus*, Swainson, Faun. Bor.-Am. ii. p. 350 (1831, nec Leach).
*Tetrao* (*Lagopus*) *rupestris* (Gm.), Swainson, tom. cit. p. 354 (1831).
*Lagopus americanus*, Aud. Syn. p. 207 (1839).
*Lagopus islandicus*, C. L. Brehm, Vogelfang, p. 264 (1855).
*Lagopus grœnlandicus*, C. L. Brehm, tom. cit. p. 264 (1855).
*Lagopus rupestris* (Gm.), Baird, B. of N. Am. p. 635 (1858).

*Rjúpa Keri*, *Rjùpkarri*, Icelandic.

*Figuræ notabiles.*

Audubon, B. of Am. pl. 301; Elliot, Monogr. Tetr. xxiii.; Sundevall, Sv. Fogl. pl. 73. fig. 2.

♂ *ad.* capite, collo, et corpore suprà, pectore et hypochondriis nigricanti-brunneis, rufescente brunneo transfasciatis et vermiculatis: pileo et loris saturatioribus, nigricantibus: mento albo: carunculâ superciliari nudâ coccineâ: alis, pectore imo et abdomine albis: remigibus primariis rhachibus fuscis: supracaudalibus sordidè brunneis, nigro vermiculatis: subcaudalibus albo et nigricante immixtis: caudâ nigrâ, vix albido apicatâ.

♀ *ad.* pileo, nuchâ et corpore suprà nigricanti-brunneis, ochraceo transfasciatis et vermiculatis: uropygio pallidiore: alis et caudâ ut in mare, sed tectricibus alarum intimis plumis dorso concoloribus immixtis: mento ochraceo, albido notato: corpore subtùs sordidè ochraceo, nigricante fasciato et vermiculato: abdomine centraliter albido, ochraceo lavato: subcaudalibus ochraceis nigro fasciatis.

*Adult Male in breeding-plumage* (Kirkjuvogr, Iceland, 4th July, with female and eggs). Head, neck, back, and upper parts generally, breast, and flanks blackish brown, barred and vermiculated with reddish brown; crown and lores nearly black; entire chin white; over the eye a tolerably conspicuous light vermilion comb; wings, abdomen, and lower part of the breast white, shafts of the primaries dark brown; under tail-coverts white, intermixed with blackish feathers, tipped with white; tail blackish, tipped with white; the longer upper tail-coverts dull brown, narrowly vermiculated with blackish; bill dark brownish horn; iris dark hazel. Total length 14½ inches, culmen 1·0, from the nostril to the tip of the bill 0·45, wing 7·82, tail 4·95, tarsus 1·2.

*Adult Female in breeding-plumage* (Kirkjuvogr, 4th July). Crown, nape, back, and upper parts generally

blackish brown, barred and vermiculated with ochre, which becomes lighter towards the tail; wings and tail as in the male, but the inner wing-coverts intermixed with feathers similarly coloured to those on the back; chin dull ochre marked with white; underparts generally dull ochre-yellow, barred and vermiculated with black; centre of the abdomen dirty yellowish white; under tail-coverts bright ochre, barred with black. Culmen 0·93, from the nostril to the tip of the bill 0·37, wing 4·75, tail 4·75, tarsus 1·2.

*Male in autumn* (Öfjord, Iceland). Resembles *Lagopus mutus* in a similar stage of plumage, but is much browner, and not clear grey on the back like that species.

*Nestling* (Háfaleita, Iceland, 9th July). Covered with soft down; crown chestnut-red, bordered with black, on the forehead intermixed with yellowish: a white line over the eye joining at the nape; lores and a line through the eye black; upper parts black, intermixed with reddish and tawny yellow; underparts dull white, tinged with sulphur grey.

*Winter plumage.* Undistinguishable from *L. mutus*.

The present species, which, though closely allied to our common European Ptarmigan, is clearly distinguishable from it, except in the winter dress, is found in Iceland, Greenland, and Arctic America, but does not appear ever to have occurred in any part of the main Palæarctic continent, where it is replaced by *Lagopus mutus* in the high lands, and *Lagopus albus* in the subalpine regions, the former alone being found in Great Britain, but *Lagopus albus* is also met with in the Nearctic region. According to Professor Newton the present species is "pretty numerous in Iceland, and not confined to the mere mountain-tops, as are their brethren in Scotland and other parts of Europe, but may be found in almost all places where berries grow."

In Greenland it is likewise a common bird. Mr. A. Pansch, who collected a series of specimens when on the German Arctic Expedition, says that "they were common throughout the winter on Shannon Island, especially in the lower parts of the island near the harbour, and were seen in coveys of from six to twenty individuals. They were so little shy that they could be killed with ease; and some were even knocked down with the ramrod. Most of them had their crops filled with small willow sprouts, and leaves and buds of *Saxifraga*, *Cerastium*, and *Ranunculus*; whereas those obtained in August had their crops full of seed-pods and leaves and sprouts of various plants. When the sun appeared they became very rare, and were seldom seen. Dr. Copeland saw a pair on the wing on the 1st of May, which appeared to be still in full winter-plumage; and he shot a male late in May, which was in full winter dress, except that a few brown feathers were amongst the lesser wing-coverts; but the comb over the eye, and the testicles, were very fully developed. We only heard the voice of the Ptarmigan once, late in May. It consisted merely of a harsh note. I infer that the Ptarmigan withdraw into the interior during the summer, as they there find a richer vegetation; whereas in the winter the lowlands near the coast are more favourable, as the storms prevent the snow from collecting, and the birds can reach the willows with greater ease." In America it is stated to occur throughout the Arctic portion of that continent.

According to Sir John Richardson "Hutchins reports that it is numerous at the two extremities of Hudson's Bay, but does not appear in the middle settlement (York and Severn

Factories), except in very severe seasons, when the Willow-Grouse are scarce; and Captain Sabine informs us that they abound on Melville Island (lat. 74° to 75°) in the summer. It arrived there in its snow-white winter dress on the 12th of May, 1820; at the end of that month the females began to assume their coloured plumage, which was complete by the first week in June, the change at the latter period being only in its commencement with the males. Some of the males were killed as late as the middle of June in their unaltered winter-plumage. In this respect the species differs from the Willow-Grouse, whose males first assume the summer colours. The Rock-Grouse is found also on Melville Peninsula and the Barren Grounds, seldom going further south in winter than latitude 63° in the interior, but descending along the coast of Hudson's Bay to latitude 58°, and in severe seasons still further to the southward. It also occurs on the Rocky Mountains as far south as latitude 55°. The Rock-Grouse in its manners and mode of living resembles the Willow-Grouse, except that it does not retire so far into the woody country in winter. Contrary, however, to what Hearne says, it is frequent in open woods on the borders of the lakes in that season, particularly in the sixty-fifth parallel of latitude, though perhaps the bulk of the species remain on the skirts of the Barren Grounds. It hatches in June. The ground-colour of the egg is, according to Captain Sabine, a pale reddish brown, and is irregularly blotched and spotted with darker brown." Audubon (B. of Am. v. p. 122) writes respecting its occurrence in Labrador as follows:—"Whilst at Labrador I was informed by Mr. Jones that a smaller species of Ptarmigan than that called the Willow-Grouse (*Lagopus saliceti*) was abundant on all the hills around Bras d'Or during the winter, when he and his son usually killed a great number, which they salted and otherwise preserved—and that in the beginning of summer they removed from the coast into the interior of the country, where they bred in open grounds, never, like the Willow-Grouse, retreating to the wooded parts. They seldom appear at Bras d'Or until the last of the Wild Geese have passed over, or before the cold has become intense, and the plains deeply covered with snow. While about his house they repair to the most elevated hill-tops, from which the violence of the winds has removed the snow. There they feed on the mosses and lichens attached to the rocks, as well as on the twigs and grasses scantily found in such places at that season. They keep in great packs, and when disturbed are apt to fly to a considerable distance, shifting from one hill to another, often half a mile off." Mr. Dall met with it as far west as Alaska, and writes (B. of Alaska, Trans. Chic. Ac. Sc. 1869, p. 289) that "it is not uncommon in the Gens du Large [?*Romanzoff*] Mountains, north-west of Fort Yukon, and has been obtained at Fort Yukon by Sibbeston, and in the former locality by Mr. McDougal. It is not found further south or west to the best of my knowledge."

In its habits and mode of nidification the present species closely resembles its near ally the common Ptarmigan. I have a large series of its eggs from Greenland obtained by Mr. Erichsen's collectors, which are undistinguishable from those of that species.

The specimens figured are:—on the one Plate a male and female in full breeding-plumage; on the second Plate another adult female with young in down, and a bird shot in early spring just in the change, with the white plumage intermixed with brown feathers. On the same Plate with *Lagopus mutus* in autumn plumage a specimen of the present species is also figured in the same stage of plumage to illustrate the difference.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Öfjord, Iceland, autumn of 1871. *b*, *c*, *d*, *e*, *f*, *g*. Öfjord, winter 1871 (*Erichsen*). *h*. Autumn plumage, Greenland (*Möschler*). *i*, ♀. Lichtenfels, South Greenland, 12th August, 1871 (*O. Finsch*).

*E Mus. A. Newton.*

*a*, ♂. Reykjavik, Iceland, May 11th, 1858. *b*, ♂, *c*, ♀. Kirkjuvogr, S.W. Iceland, July 4th, 1858. *d*, ♀. Mitdalr, Iceland, July 19th, 1858. *e*, ♂. Háfaleiti, S.W. Iceland, June 18th, 1858 (*A. N.*). *f*, *g*. S.W. Iceland, September 20th to 25th, 1859 (*A. Randoup*). *h*, *i*. Illartlek, Greenland, June 21st, 1867. *k*. Claushavn, Greenland, June 25th, 1867. *l*. Greenland, autumn plumage. *m*. Illartlek, July 27th. *n*, *pullus*. Greenland. *o*, *pullus*. Háfaleiti, S.W. Iceland, July 9th, 1858 (*A. N.*).



SPITZBERGEN PTARMIGAN.
LAGOPUS HEMILEUCURUS.

# LAGOPUS HEMILEUCURUS.

(SPITSBERGEN PTARMIGAN.)

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*Lagopus alpinus*, var. *hyperborea*, Sundev. in Gaimard, Voy. en Scand. pl. (1843).
*Lagopus hyperborea*, Malmgr. J. f. O. 1863, p. 371.
*Lagopus hemileucurus*, Gould, P. Z. S. 1858, p. 354.
*Lagopus hyperboreus*, Elliot, Monogr. Tetraon. pl. 24 (1865).

*Figuræ notabiles.*

Gaimard, Voy. en Scandin. pl. —; Elliot, Monogr. Tetraon. pl. 24.

♂ *autumnalis* aurato-fulvus, ubique nigro marmoratus vel transfasciatus: pileo distinctiùs fasciato: alâ totâ albâ, primariarum scapis nigris, tectricibus nonnullis majoribus dorsalibus et secundariis intimis dorso concoloribus: tectricibus supracaudalibus longissimis caudam subæquantibus: caudâ nigrâ, parte basali et fasciâ apicali conspicuè albis, rectricibus duabus mediis ferè omninò albis, parte medianâ ovali nigrâ, pennis exterioribus majorem partem pogonii externi latè albo marginatis: pileo laterali cum gutture toto et pectore superiore dorso concoloribus, mento et collo laterali vix albicantibus: corpore reliquo subtùs albo, hypochondriarum plumis nonnullis dorso concoloribus sparsim notatis.

*Female in summer plumage.* As is the case with all other Ptarmigans in their summer plumage, the primaries are white; in this species most of the secondaries and the wing-coverts are also white; the remainder of the plumage is rayed with black and ochreous yellow, the black predominating on the upper surface, while the feathers of the flanks are beautifully and equally barred with these two colours; the feet are white, the nails jet-black, and the bill brown. The total length of the bird is about 16 inches, of its wing $8\frac{1}{2}$ inches, tail $5\frac{1}{2}$, tarsi $1\frac{3}{4}$. (*J. Gould*, P. Z. S. 1858, p. 354.)

*Male in autumn plumage.* Above golden-buff, mottled and barred with black, which colour sometimes takes the character of minute spots, sometimes of transverse bars, some of which are broader than others, and sometimes the black extends over the greater part of the feathers; on the rump, scapulars, and interscapulary region are a few white feathers; wing-coverts and quills pure white, the shafts of the primaries for the most part black, some of the inner greater coverts and all the innermost secondaries buff, barred with black, like the back; tail white at the base and tip, black in the centre, the two middle feathers for the most part white, with an irregular oval mark in the centre, and the outside feather broadly edged with white; cheeks, throat, and upper part of the breast coloured like the back, the feathers on the chin and sides of the neck white at the base, and a white feather appearing here and there on the breast; rest of the under surface of the body white; the flanks interspersed with a good many tawny feathers; bill horn-black, yellowish at the base; toes yellowish horn-brown. Total length 15·2 inches, culmen 0·65, wing 7·6, tail 5·7, tarsus 1·1. Another specimen, killed on the same day, is still more advanced into the winter plumage, being almost entirely white, with remains of tawny feathers only on the head, neck, breast, and scapulars, and a few feathers protruding on the flanks and lower part of the back; the entire wing is white. Total length 15·5 inches, culmen 0·7, wing 7·6, tail 5·8, tarsus 1·1.

*Winter plumage.* White, with perfectly black lores; besides the two white rectrices there are seven black

on either side, 150 millimetres long, and the base white for 50 millimetres, the shaft white; quills with a dark median stripe along the feather. Total length, moderately stretched, 450 millimetres, wing 228, tail 150. It is thus larger than Gould's female. (*C. J. Sundevall* in Elliot's *Tetraoninæ*.) The winter plumage of the Spitsbergen Ptarmigan is like that of the Scandinavian bird, except that the feathers are much longer, bushier, and peculiarly soft. In size they greatly exceed the Scandinavian species, as the one shot at Wyde Bay measured over 17 Swedish inches from the tip of the beak to the end of the tail. (*A. J. Malmgren*, J. f. O. 1863, p. 370.)

Although many ornithologists have considered the characters by which this bird is distinguished to be of no real importance, we, on the other hand, believe that it constitutes a distinct species. Professor Newton, who has examined the same specimens as ourselves, sums up his remarks on them in the following words:—"On a former occasion (Ibis, 1865, p. 504) I expressed a belief that the *Lagopus* of Spitsbergen, first described by Mr. Gould under the name of *L. hemileucurus*, was identical with *L. rupestris*. I now wish to state that I have much doubt on that point, and that I am inclined to recognize its distinctness. Hofrath von Heuglin has within the last few days kindly sent for my inspection some birds' skins collected by him in that country last year. Among these are three specimens of *Lagopus*; and on comparing them with a tolerably good series of examples of *L. rupestris* from Greenland (*L. reinhardti*) and Iceland (*L. islandorum*), I find that the rectrices of all the Spitsbergen birds are so much variegated with white as fully to deserve the name applied by Mr. Gould, while those of *L. rupestris* are invariably black, except in some cases at the tip. Furthermore, one of the Spitsbergen birds, marked 'male' by Herr von Heuglin, though apparently fully coloured on the breast and back, is of a very different shade from any male of *L. rupestris* that I remember having seen. Under these circumstances I think that it is quite possible that *L. hemileucurus* is entitled to specific rank, though it is certainly more nearly allied to *L. rupestris* than to *L. alpinus*." In order that the differences in the coloration of the tails of the present species and *L. rupestris* may be better appreciated, we have had a woodcut executed to illustrate the distinctive characters.

Professor Sundevall, in a communication furnished to Mr. Elliot's great work on the Grouse, gives an account of three specimens in the Stockholm Museum, in both summer and winter plumage, and, after stating full particulars concerning these examples, concludes in the following words:—"On comparing these birds with the males from Greenland and Iceland, these last are found to be much smaller, and the base of the rectrices much less white, which colour does not extend further on the shaft than on the web; also the shafts of the remiges are black for their whole breadth. As these differences seem to be constant, they are sufficient to render the Spitsbergen bird always recognizable from the other two, and thus entitle it to be considered a distinct form, if we may not even believe it to be of different origin. I have a female from Greenland, and in this the white basal part of the outer rectrices has really a little difference in form from the male's; it is larger on the outer side. From the European *Lagopus* they all differ, the males more, the females from Greenland less; but they come very close to it in the form of the bill, black lores," &c. Mr. Elliot finishes up his very complete account of this species thus:—"As it seems pretty evident that the extent of the white on the tail varies in different specimens (a fact which I have noticed in a large number of examples of *Lagopus albus*), the claims of this bird to specific distinction rest upon its large size, which, at the best, is a very questionable

sufficiency; and it would seem to be most likely the *Lagopus rupestris*; but without any number of examples to enable me to form my opinion, I have deemed it best to give a figure of the female sent to Mr. Gould, and to hope that some not very distant day will afford the material for rightfully determining what is now so doubtful a point." In the specimens which we examined we found that the bill was very little (if any) larger than in *L. rupestris*; and the claim of the bird to specific distinction rests, in our opinion, not so much on the larger size, as Mr. Elliot suggests (for this seems to vary also), as upon the difference of coloration and upon the constant difference in colour of the tail.



The late Mr. Evans sent the following account of the species to Mr. Gould:—"The skin sent is the only one I have from Spitsbergen, although I shot many. The birds were so plentiful that, thinking I could always procure examples, I neglected to preserve any at the time, and was obliged to come away at last with only this one. The hen birds had all assumed their summer plumage; but the males had not changed a feather, though the old ones, which had become very ragged and dirty, would almost fall off on being touched. I started one hen from her nest, or rather from the little dry hollow where she had collected a few stems of grass, and found two eggs; these were all we met with; the nest was placed in the high fields, where, in the dry parts, scarcely any vegetation is to be seen, while the swampy portions, where the snow had melted, were covered with coarse grass and the dwarf willow, which is the only thing approaching to a shrub on these barren, treeless islands. The specimen sent was shot on the 27th of June, on the south shore of Ja Sound, in about $77\frac{3}{4}^{\circ}$ north latitude. The neighbouring country consisted

of a belt of swampy ground covered with rank grass, with high, rugged and barren mountains rising behind, covered with snow, except on their sharp ridges and steep sides; these mountains, which are interspersed with vast snow-clad plains, stretch away for miles inland, and rise with beautiful cones in the distance; here and there, in a few sheltered spots, a scanty supply of small flowers is to be found, mostly belonging to the following families:—Draba, Ranunculus, Saxifraga, &c. The dark-grey rocks were covered with lichens in great variety, but of a gloomy and sombre hue, in strict keeping with the wildness of the scene; here, too, the reindeer-moss grew in great abundance. I may remark that the Ptarmigans were so tame that we could easily have knocked them down with a long stick—doubtless from being so unaccustomed to the intrusion of human visitors."

Dr. A. J. Malmgren (J. f. O. 1863, p. 370) writes as follows:—"The Ptarmigan occurs sparingly on the coast of Spitsbergen. On the 4th of June I saw a pair at Wyde Bay in full winter plumage; and Mr. Pertensen shot one of them with a bullet: this example is now in the Stockholm Museum. The most northern locality where Ptarmigan are found is on the north shore of Brandywyne Bay, in 80° 24′. I saw a pair there flying near the summit of a mountain, but could not approach them, as the mountain was inaccessible. At Lomme Bay, Ptarmigan with their young were seen on the 22nd of August. Their food consists of leaves and buds of *Saxifragæ*, *Salix polaris*," &c. Two years later he published the accompanying observations:—"It is rare on Spitsbergen. On the last expedition I only observed a single male on the Isefjord, which I shot, and which is now in the Stockholm Museum. It was found between the rocks, in a cup-shaped valley, about 2000 feet above the sea-level, and fed on flowers, flower-buds, and leaves of *Dryas octopetala*, which grew so abundantly there that it carpeted the ground. In its crop I found nothing but fresh remains of *Dryas*. I only once heard its note, which was a deep bass note, like *arrr* or *errr*, and resembled the croak of a frog (*Rana temporaria*). Mr. O. Fabricius says the same of the note of the Greenland Ptarmigan. We did not discover the nest on our last expedition; and, as far as I know, Edward Evans is the only person who has done so; he found a nest containing two eggs, in June 1855, at Isefjord."

Dr. Th. von Heuglin states "I only observed this species at Eisfjord (Sassen Bay, Advent Bay, and Alkhorn), where it is not rare, as my companion shot twenty-one in a few hours. It occurs also in Northern Spitsbergen. The statement of Mr. B. von Löwenigh to the effect that it is common at Whales Point (Ergänzungsheft no. 16 der Geogr. Mitth. p. 42) must rest on an error. It will be interesting to ascertain which form of *Lagopus* is found on Nowaja Semlia. Will it be *L. brachydactylus*?"

From Dr. von Heuglin's specimens our Plate has been drawn; and we have to express to Dr. Otto Finsch our best thanks for allowing us, on behalf of the Naturwissenschaftlicher Verein of Bremen, to retain the skins for some time, so as to allow of a drawing being made.

The descriptions of the summer and winter plumages have been drawn from other sources; but the autumnal dress is here noticed and figured for the first time. A good plate of the summer dress is given by Mr. Elliot (*l. c.*).




WILLOW PTARMIGAN.

LAGOPUS ALBUS



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LAGOPUS ALBUS. Winter Plumage. LAGOPUS MUTUS.

# LAGOPUS ALBUS.

(WILLOW-PTARMIGAN.)

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*The White Partridge*, Edwards, Nat. Hist. Birds, pl. 72 (1748).
*Tetrao lagopus*, Linn. Syst. Nat. i. p. 275, no. 4 (1766, ex Edw.).
*Lagopède de la Baye d'Hudson*, Buff. Hist. Ois. ii. p. 310 (1772).
*Tetrao albus*, Gm. Syst. Nat. i. p. 750 (1788).
*Tetrao lapponicus*, Gm. tom. cit. p. 751.
*Tetrao cachinnans*, Retzius, Faun. Sv. p. 210 (1800).
*Tetrao saliceti*, Temm. Man. d'Orn. p. 295 (1815).
*Lagopus albus*, Vieill. Nouv. Dict. xvii. p. 203 (1817).
*Tetrao subalpinus*, Nilsson, Orn. Sv. i. p. 307 (1817).
*Tetrao* (*Lagopus*) *saliceti* (Temm.), Swainson, Faun. Bor. Am. ii. p. 351 (1831).
*Lagopus subalpina*, Nilsson, Skand. Faun. ii. p. 88 (1835).
*Tetrao brachydactylus*, Temm. Man. d'Orn. iv. p. 328 (1840).

*Lirype*, Norwegian; *Dalripa*, Swedish; *Metsäkana*, *Riekko*, Finnish; *Koropátka*, Russian.

*Figuræ notabiles.*

Edwards, *l. c.*; D'Aubenton, Pl. Enl. 129; Werner, Atlas, *Gallinacés*, pl. 8; Naumann, Vög. Deutschl. pl. 159; Gould, B. of Eur. pl. 255; Elliot, Monogr. Tetr. pls. 17, 18; Audubon, pl. 299.

♂ *ad. ptil. æst.* capite et collo saturatè rufis, nigro maculatis: dorso et scapularibus rufis, nigricante fasciatis et vermiculatis: alis albis: uropygio cum supracaudalibus dorso concoloribus: gulâ, gutture, pectore et hypochondriis rufis, vix nigricante guttatis et vermiculatis: abdomine centrali, tibiis et tarsi plumis albis: subcaudalibus rufis, nigro fasciatis et albido immixtis: supra oculos maculâ nudâ papillosâ coccineâ.

♀ *ad. ptil. æst.* mari similis sed minor, collo et pectore sordidioribus et nigro conspicuè fasciatis, mento ochrascenti-flavo.

*Adult Male in spring plumage* (Finland, May). Head, neck, breast, upper part of flanks, and back rich dark red, most uniform and rich in colour on the fore part of the neck and breast; feathers on the crown with black centres, those on the neck, breast, and back more or less vermiculated with black, those on the back being most closely marked, and many being also narrowly terminated with white; rump and upper tail-coverts similar to the back, but intermixed with a few white feathers; tail (excepting the two central rectrices, which are white) blackish, tipped with white, excepting on the outer feathers; wings and underparts, excepting as above stated, pure white; shafts of most of the primaries brownish towards the tip; feathers covering the nostrils, a small space on the chin at the base of the under mandible, and region round and behind the eye white, lower part of the chin almost black; above the

eye a tolerably large warty red comb; bill blackish horn; iris brown. Total length about 15 inches, culmen 0·88, from the nostril to the tip of the bill 0·47, wing 8·1, tail 5·1, tarsus 1·7.

*Adult Male in summer.* Differs from the above in having all the upper parts, except the wings, unmixed with white, no white feathers in the tail; the under tail-coverts like the upper tail-coverts, and only the centre of the abdomen white. A specimen shot in Norrland as late as the 16th September has still retained the full plumage, and merely has the white area on the underparts rather more extended.

*Adult Female in summer.* Differs from the male in being smaller in size, and in having the neck and breast duller in colour, and barred with blackish; and the chin is yellowish, not blackish red. Culmen 0·88, from the nostril to the tip of the bill 0·45, wing 7·4, tail 4·6, tarsus 1·65.

*Winter plumage.* Pure white, excepting the tail, which is black, broadly tipped with white; legs and feet covered with long hair-like feathers, the growth of which at this season of the year is very close and long, and the claws are longer than in the summer.

*Obs.* In the autumn plumage they differ from the summer dress in having more white on the underparts and in having the red portion of the plumage duller and more worn in appearance. An old female shot in August is still nearly in full summer dress, but has the underparts whiter than in examples obtained in June and July. From this dress they gradually pass into the full white winter dress.

The Willow-Grouse has a most extensive range, being found throughout the northern portions of both the Palæarctic and Nearctic regions. It does not occur in Great Britain, being there replaced by a closely allied species (*Lagopus scoticus*); but in Scandinavia it is extremely common. Mr. Collett writes that "it breeds numerously in the birch-region in all the fell-districts, and in the coast region from Stavanger up to the Russian frontier; but in the low-lands eastward of Christiania it is entirely wanting." It is probably most abundant on certain of the flat islands (distinguished by a vigorous birch-growth) lying to the north of the Polar circle, especially in Lofoten and along the coast of Nordland and Tromsö Amts. The islands best known in this respect are those of Hasselö, in Lofoten, and Carlsö, north of Tromsö, a very considerable number of this species being annually killed there, and apparently without affecting their numbers.

"On the 14th June the males were to be seen on the 'Spil' in all directions among the bushes of Hasselö. On Tromsöen this bird may be said to be almost domesticated; it nests in the gardens of the inhabitants and in the grounds of the neighbouring villas, in no wise disturbed by the daily avocations going on around. By the 21st July the young birds had attained the size of a Hazel-hen.

"Otherwise this species is pretty evenly distributed throughout the whole of Finmark, in every spot where birch or willow growth is to be found. In the extreme north—every vestige of tree vegetation having vanished—its absence is supplied by *L. alpinus* (*L. mutus*). Perhaps nearly half a million individuals of both species are annually shot and snared in Norway, three fourths of the number belonging to the present species."

In Sweden, according to Professor Sundevall, "it is found from the extreme north down to about Silja in Dalecarlia, and in the northern portion of Wermland down to the neighbourhood of the fells, and somewhat below that; but it only occurs accidentally in the southern portions

of the Swedish lowlands. In the interior of Sweden it is common throughout Lapland proper within the birch-region, and in elevated places in the conifer-region, as at Lycksela, Åsele, Ångermanland, &c., and in Dalecarlia and Wermland." In Finland, according to Dr. Palmén (Finlands Foglar, ii. p. 40), "it is found throughout the country in larger or smaller numbers, but is altogether wanting on Åland. In the south-western coast districts it is rare, and also uncommon in the interior. Mr. J. von Wright only once observed it at Uskela. Only a few are to be met with on the islands off the Nyland coast; but on the mainland it breeds in the vicinity of Helsingfors and Borgå, but is comparatively rare. In Temmela it is common, as also in the interior of the country, even on the islands in the lakes. Along the west coast it appears to be found in but small numbers up to Björneborg; and Alcenius states that it occurs in the vicinity of Gamla-Carleby, and Wasa. In the northern portion of the country it is common in all suitable localities." To this I may add that I met with it on one or two occasions near Wyburg in Southern Finland, and saw it frequently on various portions of the coast when travelling northward in the spring. In Russia it is extremely common in the northern governments. I saw it near Nijnie Novgorod in the winter, and also near St. Petersburg and Moscow. Mr. Sabanäeff informs me that it breeds in the Jaroslaf Government, and is numerous in the Governments of Tver and Wladimir, and has been met with in the breeding-season near Odoeff in the Government of Tula. He further states that, according to Hoffmann, it is very common in the northern parts of the Government of Perm, and ranges as far north as 70° N. lat. It is also common on the black-earth plains in the Shadrinsk and Ekaterinburg districts in the Central Ural, but is rare on the south-western slopes. According to Eversmann it does not breed in the Kazan Government; and Aksakoff says that it does not occur in the Government of Ufim during the summer season. Pallas is wrong, Mr. Sabanäeff says, in stating that it is only found during winter in the Government of Chelibiansk. In the Baltic provinces it appears to be tolerably common; and Meyer (Vög. Liv. p. 158) states that it is very numerous in Livonia, in Esthonia, and Courland, is found in Prussia in the neighbourhood of Tilsit, and even occasionally straggles into Pomerania. Curiously enough, in Western Scandinavia it scarcely ever appears to range down to the shores of the Baltic.

To the eastward the Willow-Grouse is found throughout Siberia to Kamtschatka. Dr. von Schrenck says it was the only species of Ptarmigan he met with in the Amoor country, and that it was numerous, especially during the winter season. In the winter he saw large flocks in the northern parts of Saghalien and on the Lower Amoor river as far as Kidsi. Above that place it becomes rarer, but is said to occur at Gorin and Chongar, and is known by name, at least to the natives of Dawunda, above the Geong Mountains. Dr. G. Radde did not meet with it either on the Central Amoor or in the districts skirting Lake Baikal; but in the Eastern Sajan he found it at an altitude of from 5000 to 6000 feet above the sea-level, where it breeds in the valleys overgrown with small birch trees. Von Middendorff writes that it ranges in the Taimyr country up to $72\frac{1}{2}^{\circ}$ N. lat., or to the Nowaja river, where he met with a single specimen. At Chátangskij Pogost, in 72° N. lat., it was commoner than *L. mutus*. In these northern latitudes all the Ptarmigans are wanting during the winter, as they migrate southwards, returning northwards again in April or May. In South-eastern Siberia Von Middendorff first met with it on the Lena, in 58° N. lat.; but on the more lofty portions of the Stanowoj Mountains he lost sight of

it, and found it again on the elevated portions of the large Schantár Island. On the Tugur river it was numerous.

In the Nearctic region it is found throughout Arctic North America and in Newfoundland, but rarely occurs within the limits of the United States territory. Audubon states that he had the skins of Willow-Grouse which had been shot near Lake Michigan; but there do not appear to be any specimens preserved which have been obtained in the United States. Sir John Richardson (Faun. Bor.-Am. p. 351) says that it "inhabits the fur-countries from the fiftieth to the seventieth parallel of latitude, within which limits it is partially migratory—breeding in the valleys of the Rocky Mountains, the barren grounds, and Arctic coasts, collecting in flocks on the approach of winter, and returning southward as the severity of the weather increases—considerable bodies, however, remaining in the woody tracts as far north as latitude 67°, even in the coldest winters." On the west side of the continent Messrs. Dall and Bannister obtained it at Sitka; and Bischoff got one at Kadiak. Mr. Dall writes that it is abundant from Fort Yukon to the sea; and Mr. Bannister says that it is "common on the island and the adjoining mainland during the greater part of the year, but especially abundant in the spring." The former gentleman writes as follows:—"As soon as the ground is well covered with snow, these birds appear on the river, where they may generally be found in coveys, among the willow thickets. They are moderately shy, and on alarm fly immediately, but without much noise.

"They make regular paths along the banks, among the willows, on which they always run; and the Indians set a small barrier of brush on each side of this path and a snare directly across it, and catch them by hundreds in this manner, though the vigilant Ravens and Foxes are ever on the watch to devour the bird as soon as snared. They are abundant in the fall and mid-winter. In February they gather in immense flocks, and go nobody knows where. About the middle of March they return as suddenly, and remain a few weeks, when they go altogether to the mountains or open country, where they pair and breed. These facts have been known to me from observations for two years; and the Russians and Indians bear witness that it is so every year. In 1867 they left about February 15th, and came back about April 1st, leaving for the mountains about May 3rd. In 1868 they left about February 10th, and came back March 21st, leaving for the mountains April 28th, going and coming in great flocks, like a snow squall." Captain Blakiston writes (Ibis, 1863, p. 127) that it ranges across the interior of North America "from Hudson's Bay to near the Rocky Mountains. I obtained a chance bird (Ibis, vol. iv. p. 8) near Fort Carlton; but it is not every winter that they migrate so far south on the Upper Saskatchawan. Nearer Lake Winipeg, at Fort Cumberland and to the eastward, they are common every winter; and numbers of specimens are received from the shores of Hudson's Bay, where it is in considerable request as an article of food in winter. Mr. Ross mentions this species as common on the Mackenzie."

In its habits the Willow-Grouse closely assimilates to our common Scotch Red Grouse, to which species it is so closely allied that some naturalists look on these two birds as merely forms or races of the same species; but this view of the case is one I cannot in the least indorse. I have often seen and shot the present species in Northern Sweden and Finland; and when travelling up the coast in the latter country in the early spring, just as the snow was thawing and the roads becoming impassable with a sledge, I often scared up Willow-Grouse by the road-

side, and shot several at different times out of my carriage. They had then partly assumed the summer plumage; and one, an old male, shot early in May, was already in almost full summer dress. In the flat country near Uleaborg, in large tracts covered with low bushes, and scattered through with tolerably large birch trees and conifer-growth, I found the Willow-Grouse numerous, and had ample opportunities of observing its habits during the breeding-season. I always observed them singly or in pairs; and in the early spring I have often, when sleeping out in the open air, enticed the males almost to our camp-fire by imitating their call-note. They begin to move about very early in the morning; and one of the first sounds heard is the peculiar *back, back, brrr, brrr* of the Willow-Grouse. At this season of the year the males are particularly pugnacious; and though monogamous, it is affirmed by many careful observers that they hold a sort of *lek* like the Blackgame and Capercaillie, and engage in desperate combats for the possession of the females. I have personally never seen any thing of this description; but there is no doubt that the males often fight and may at any time be heard challenging and flying towards each other. When the male flies off, it utters a cackling note, resembling that of our common Grouse; and when strutting to and fro with outstretched neck and expanded tail, displaying his plumage for the benefit of the female, he utters a clear note, like *kavao, kavao,* which the female answers with a low, rather subdued, mewing note, *neeau, neeau.* About the latter end of May the female has deposited her eggs, which are placed in a very simple nest, consisting merely of a hole scratched under a bush, and but slightly lined with bits of grass-straws or fine twigs of the dwarf birch, or of the small berry-growing bushes so common in the high north. In number the eggs vary from seven or eight to fourteen or fifteen, and even more; but I have never found a nest with more than twelve. Compared with the eggs of our Scotch Grouse, I can find no appreciable difference; and if mixed up together, I believe that it is quite impossible to separate them. The young are able to take care of themselves almost as soon as they emerge from the shell, and when suddenly surprised hide with great celerity. They are most carefully tended by both parents; and when I have suddenly come upon a pair with their young I have been greatly interested in observing the extreme solicitude with which both the male and the female have tried to divert my attention and lure me from the place, at the same time exhibiting a disregard of danger concerning themselves which at other times they were far from showing. I once came so silently and suddenly on a family, that I succeeded in pouncing on and securing a couple of young ones, which I put into my shooting-coat pocket, intending to convert them into specimens; but the poor mother exhibited such extreme distress that I had not the heart to deprive her of them, and let them go again, thus deferring the opportunity of getting the young in down till a more convenient occasion, which, I may add, did not again present itself; and I have since somewhat blamed myself for being so soft-hearted. The young birds grow quickly; and I have seen them full-grown early in August. At that season of the year they are in families, each pair escorting their brood; but later in the season they pack in flocks of considerable magnitude, and I have heard reliable sportsmen declare that they often number as many as a thousand in one pack; but I have never seen a pack of any great size. After a slight fall of snow, when the footprints are clearly visible, I have frequently tracked them, and either shot them on the ground or as they took wing; but, as a rule, I have found them rather wild and difficult to approach within range.

In the northern portions of Scandinavia vast numbers of the Willow-Grouse and Ptarmigan are snared and, after being frozen, are sent down to the larger towns by sledge-loads. To show what numbers are thus transmitted, I may name that when travelling from Stockholm to Luleå I frequently met several sledge-loads together on the high road; and one day I counted no less than thirty sledges, each of which would contain about a couple of thousand birds. Unlike our Scotch Grouse the Willow-Grouse frequently perches on trees; and during severe weather I have not unfrequently seen them on the birch trees feeding on the buds, and have been assured that the male often perches on the top of a tree during the pairing-season. The present species passes the night on the ground, during the winter often seeking shelter and warmth in a snow-drift; but they appear seldom to be deeply embedded in it, being easily flushed. During the winter it feeds on tender shoots of the dwarf birch, common birch, and willow, and in the autumn on berries of various sorts which flourish so abundantly on the low grounds of Northern Europe, such as the blueberry, cranberry, crowberry, cloudberry, and that most delicious of northern berries when preserved, the so-called "Åkerbär" (*Rubus arcticus*, a sort of raspberry), which creeps over the ground in the high north. In the summer it lives on the seeds of various wild grasses and the leaves and tender shoots of various bushes and plants.

Mr. Barth, a well-known and most reliable Norwegian sportsman, has published (J. f. O. 1869, pp. 87–92) some excellent notes on the Willow-Grouse, from which I extract a few particulars, as follow:—The present species is, he says, found only where the birch tree is abundant; and plains where only the dwarf birch and willow are found are not suitable to it, as it cannot live in localities where the cover is poor, but requires birch-thickets; thus it is rare or common, according as the birch-growth is distributed. Where larger birch-woods and birch-thickets are found alternately and juniper bushes are scattered here and there, are its favourite haunts; for here it finds good cover during the seasons when it is changing its plumage. The female deposits from eight to eighteen and even twenty eggs, early or late, according to the elevation inhabited by the bird. Mr. Barth found newly hatched young in July, and eggs as late as the middle of August. The young birds can fly when eight days old, at which age they are about as large as a Lark. The parent bird tends them with the greatest care, and when surprised with them will not desert them, but may often be approached near enough to be knocked down with a stick. When about four weeks old the young are as large as a Plover, and are then considered old enough to shoot. They lie very close, and scatter after being flushed, and are thus easily procured with the aid of a good dog. In August they grow very quickly, and by the end of the month they are full-grown. It appears that when small they not unfrequently lose their parents, but are then taken care of by others; and not seldom as many as thirty individuals of various ages are found in one covey. Until late in September the coveys remain in the localities where they have bred, and can be approached; but later than that they pack and resort to the mountains, and gradually get into the regions where the tree-growth ceases. They are then unapproachable, and a quick shot only can get an odd bird out of a pack of about five hundred. Mr. Barth speaks of a pack of about three thousand individuals which he saw between the 3rd and 10th of November. Curiously enough they are sometimes much less shy than at others; and Mr. Barth cannot account for this, except that the weather may to some extent be the cause. He remarks that during the winter they not unfrequently feed at night, and from the middle of




**LAGOPUS ALBUS.**

March to the middle of April they are to be found in the morning and afternoon in the tops of the birches feeding on the buds. About the middle of March they pair and commence to drum when in packs of several hundred individuals, but soon scatter to their respective breeding-haunts, where they live in pairs. The males, however, are more numerous than the females, those which remain unmated ranging about in flocks; and Mr. Barth met with one of about forty individuals on a small island, and shot fifteen out of them, it being considered quite correct to shoot these even during the breeding-season.

Several ornithologists have instituted researches as to the cause of the claws of the present species being worn or cast, and as to the time when they are cast and the new ones produced. After having carefully read the various articles on this subject I feel that I cannot do better than give a translation of some notes published by Professor A. J. Malmgren (Sällsk. pro Fauna et Flora fennica, not. vi. pp. 89–94: Helsingfors, 1861). This gentleman carefully collected a large series of feet of the Willow-Grouse, at all seasons of the year, keeping particulars as to age, sex, &c.; and from a critical examination of nearly two hundred pairs of feet collected in the same locality, in the district of Kajana, Finland, he arrives at the following conclusions:— From the end of October to April the winter claws remain unchanged; they are even, broad, scooped out in shape, somewhat bent, very strong and thick on the ridge, and on the middle toe measure up to and above 20 millimetres in length. In April and early in May the tip and sides are often found to be broken, owing probably to the hard-frozen surface of the snow at that season; but so soon as the ground becomes bare of snow, say about the middle of May, they get even edges again *and retain the same length, form, and appearance as during the winter* up to the end of June or the first days in July. Then, however, a sudden change takes place, as they become quite short, without any intermediate stage between the 19-millimetre-long claws worn in June to the July claws of only 10 millimetres length. To a practised eye, moreover, it is apparent that these latter claws are new; and they immediately commence to grow, so that late in July they are visibly longer. In August and September they continue to grow quickly, and in October have obtained the full length of the winter claws. The thick, hairy feathering of the toes is cast late in May or early in June, and during the remainder of the latter month and throughout July only the inner portions of the toes are covered with hair-like feathers. Early in August the new feather-growth commences to appear, and gradually thickens till, by the end of October, it is as dense as in midwinter. Professor Malmgren further shows that the shortness of the summer claws cannot arise from continued wearing away by scratching, as was supposed by Professor Bonsdorff to be the case, as the winter claws remain unaltered during the months of May and June, when the ground is bare, and then in July the bird is found suddenly with short claws, though the ground is bare, there being no gradual change; and these short claws gradually develop and attain their full length and appearance as in midwinter, whilst the ground is bare. In the paper above quoted, Professor Malmgren gives a careful description of the claws at various seasons of the year, but could not have them figured, though he had prepared some careful sketches. These he has placed at my disposal, and an extra uncoloured Plate will be given of them, as they show more clearly the various stages of the growth of the claws than any description that could be written.

Professor Baird remarks on the difference in size of the bills of individuals from various

localities, and appears to consider that more than one species may be distinguished by this character. Mr. Elliot, in his Monograph of the Tetraonidæ, however, clearly demonstrates that the size of the bill is merely an individual variation, and founds his opinion on numerous specimens from Great Slave Lake, Mackenzie River, Fort George, Lapland, Sweden, and Newfoundland, stating that the size of the bill ranges all the way from the robust and powerful to almost as small and delicate as that which characterizes *Lagopus mutus*. I may add that the series I have examined fully bears out the view of the case taken by Mr. Elliot.

The specimens figured are those described, and are in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Raumo, Finland, May (*H. E. D.*). *b*, ♂ *ad.* Norrland, September 16th, 1871 (*Meves*). *c*, ♂ *juv.* Norrland, September 26th, 1871 (*Meves*). *d*, ♀ *ad.* Norrland, August 12th, 1871. *e*, ♂ *ad.* Christiania, Norway, December 1870 (*Collett*). *f*, ♂ *ad.* Siberia, winter plumage (*Dode*).

*E Mus. A. Newton.*

*a*, ♂. Muonio-vaara, West Bothnia, May 1857. *b*, ♂. Mukka-uoma, June 3rd, 1857. *c*, *d*, *e*, *f*. Muonioniska, October 1856. *g*, *h*. Newfoundland, winter plumage (*Reeks*). *i*. Newfoundland, spring plumage (*Reeks*). *k*. Moose Factory. *l*. York Factory, Hudson's Bay Territory. *m*. Alaska (*Whymper*).

*E Mus. H. B. Tristram.*

*a*, *b*, ♂, *c*, ♀. Kjærringœ, Norway, July 1852. *d*. Norway, March.

## Genus BONASA.

*Tetrao* apud Linnæus, Syst. Nat. i. p. 275 (1766).
*Bonasa*, Stephens in Shaw's Gen. Zool. xi. pt. 2, p. 298 (1819).
*Bonasia* apud Kaup, Natürl. Syst. p. 179 (1829).

The Hazel-Grouse inhabit the Palæarctic and Nearctic Regions, one species being resident in the Western Palæarctic Region.

They frequent wooded localities, especially where conifers intermixed with non-evergreen trees abound. They walk with ease, and appear to spend a good deal of their time on the ground searching after food; but when flushed they at once fly into a tree and trust to concealment amongst the foliage. They are usually found singly or in pairs in the spring and early summer; and when the young are able to accompany their parents they range about in family coveys. They are somewhat peculiar in their partiality for one locality, and seldom range far. Their flight is noisy and tolerably strong; but they seldom fly far, usually only for a distance of from fifty to a hundred yards. Their call-note is a peculiar whistle, uttered when they are separated and call to each other. They feed on buds, seeds, berries, and insects of various kinds. They are monogamous, and appear to be much attached to their mates. Their nest is a mere hole scratched in the ground, usually under cover of a bush, and scantily lined with grass; and their eggs, which are numerous, are pale yellowish with a rufous tinge, sparingly spotted with rufous.

Stephens (*l. c.*), who founded this genus, included in it only two American species—one of which, *Bonasa umbellus*, is congeneric with our Hazel-Grouse, whereas the second, the Pinnated Grouse, has been subsequently, and with good reason, separated generically, and now stands as *Cupidonia cupido*. Kaup (*l. c.*), who only treated of the genera of European birds, included only the Hazel-Grouse in this genus, making it the type.

*Bonasa umbellus* must undoubtedly be considered to be the type of the genus; but as this species does not occur in the Western Palæarctic Region, I give the characters of our bird, *Bonasa betulina*, as follows, viz:—beak moderate, stout, decurved towards the tip; nostrils basal, lateral, concealed by short feathers, which cover the nasal membrane and extend nearly to the middle of the bill; feathers on the crown elongated, forming a crest; a small, narrow bare place above the eye; wings rather short and broad, the first quill shorter than the secondaries, the second shorter than the sixth, the next three nearly equal and longest; tail moderately long, broad, slightly rounded; tarsus scutellate, on the upper half feathered; toes bare, scutellate, pectinated on the sides; claws moderately long, obtuse, slightly curved.



HAZEL GROUSE.

BONASA BETULINA.

# BONASA BETULINA.

(HAZEL-GROUSE.)

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*Tetrao bonasia*, Linn. Syst. Nat. i. p. 275 (1766).
*Tetrao betulinus*, Scop. Ann. i. Hist. Nat. no. 172 (1769).
*La Gélinotte*, Buff. Pl. Enl. ii. pl. 474, 475.
*Tetrao canus*, Sparrm. Mus. Carls. i. pl. xvi. (1786).
*Bonasia rupestris*, Brehm, Vög. Deutschl. p. 513 (1831).
*Bonasia sylvestris*, id. *tom. cit.* p. 514 (1831).
*Bonasia europæa*, Gould, B. of Eur. iv. pl. 251 (1837).
*Bonasia sylvestris*, Bonap. Comp. List B. Eur. & N. Am. p. 43 (1838).
*Tetrastes bonasia*, Keys. & Blas. Wirb. Eur. p. 200 (1840).
*Bonasa sylvestris*, Gray, List Gen. of B. p. 80 (1841).
*Bonasia lagopus*, Brehm, Naumannia, 1855, p. 287.
*Bonasia minor*, id. *tom. cit.* p. 287.
*Bonasia albogularis*, id. *tom. cit.* p. 287.
*Bonasia betulina*, Bonap. Cat. Parzud. p. 13 (1856).
*Bonasa betulina*, Gray, Hand-l. of B. ii. p. 277 (1870).

*Gélinotte*, French; *Francolino di monte*, Italian; *Haselhuhn*, German; *Hjerpe*, Swedish and Norwegian; *Riabchik*, Russian.

*Figuræ notabiles.*

Buff. Pl. Enl. pl. 474, 475; Naum. Vög. Deutschl. vi. Taf. 158; Gould, B. Eur. pl. 251; Bree, B. of Eur. iii. p. 203; Elliot, Monogr. Tetraon. pl. 4; Sundev. Sv. Fogl. pl. xxxiii. figs. 4, 5; Fritsch, Vög. Eur. tab. 31. figs. 1, 2; Lloyd's Game B. Sweden & Norway, p. 112.

♂ *ad.* cristatus: suprà clarè cineraceus, plumis nigricante transfasciatis: pileo magis brunnescente, vix ferrugineo tincto, plumis ad basin nigricantibus et nigro irregulariter transfasciatis: maculâ post-oculari, loris et genis albis, paullulum nigro mixtis, his fasciam latam undique per latera colli deductam formantibus: fasciâ mystacali gulâque totâ nigerrimis: scapularibus ferrugineis nigro transfasciatis et vermiculatis, vix cineraceo tinctis sed fulvido angustè marginatis, plumis extimis albo latè terminatis fasciam distinctam exhibentibus: dorso postico et uropygio puriùs cineraceis, minùs nigricante variis, plumis omnibus obscurè fulvido marginatis: tectricibus alarum cinerascenti-brunneis, minimis fulvo limbatis et maculatis, majoribus conspicuè albo terminatis: remigibus brunneis, extùs fulvo irregulariter marginatis, primariis extimis rufescente fasciatim variis, secundariis cinerascentibus, fulvo marginatis, ferrugineo tinctis, extùs versus apicem nigricantibus et ubique nigro variegatis: caudâ cinerascenti-brunneâ, nigro irregulariter vermiculatâ, rectricibus duabus centralibus fulvo transfasciatis, reliquis versus apicem nigris fasciam nigram latam formantibus, albido terminatis: subtùs albicans, plumarum parte basali nigricanti-brunneâ: pectore paullò rufescente tincto: hypochondriis lætè ferrugineis, fasciâ anteapicali nigrâ et apice albâ notatis: subalaribus cinerascenti-

brunneis, albo maculatis et lineatis: rostro nigricanti-corneo: pedibus grisescenti-brunneis: iride brunneâ, areâ supraoculari coccineâ.

♀ *ad.* mari similis, sed rufescentior: suprà vix cinerascens, et gulâ albidâ et areâ supraoculari plumosâ semper distinguenda.

♂ *juv.* similis feminæ adultæ, sed suprà obscurè fulvo transfasciatus, scapularibus nigricantibus: subtùs fulvescenti-albus, pectore summo rufescente: gulâ albicante, brunneo mixtâ.

*Adult Male.* Above ashy grey, all the feathers of the upper part of the neck and interscapulary region transversely barred with blackish; the head crested, the feathers slightly tinged with rufous, the bases of the long crest-feathers showing rather plainly, which gives them a blacker appearance; a line of feathers behind the eye, extending above the ear-coverts, white; lores white, varied with black just above the nostril; a spot underneath the eye white; cheeks white, slightly varied with blackish, extending backwards and running down the sides of the neck, and forming a white band as far as the scapulars; moustachial region and entire throat jet-black; scapulars rusty red, varied with black, which takes the form both of broad bands and minute vermiculations, some of the feathers mesially streaked with cream-colour, and most of them narrowly edged with fulvous, the outer feathers tipped on the outer web with a broad spot of white, which forms a very distinct band running the whole length of the scapulars; lower part of the back, rump, and upper tail-coverts clearer ashy grey, less varied with black, which only appears here and there in the form of an occasional narrow transverse bar, a mesial streak, or a few obscure mottlings and vermiculations, all the feathers obscurely edged with very pale buff; wing-coverts ashy brown, all of them more or less broadly margined with fulvous or white, the least ones spotted and irregularly barred with fulvous, the median and greater coverts very distinctly spotted with white; quills brown, the primaries distinctly margined with fulvous along the outer web, and slightly freckled with brown, the two outermost quills rufescent on the outer web, alternately barred with brown, which gives it the appearance of a chess-board, the secondaries more washed with ashy grey, tinged with rust-colour, and transversely barred with pale fulvous, all the feathers more or less freckled with black, and the innermost or dorsal secondaries broadly edged with black along the outer web, and with fulvous at the tip and on the inner web of the feathers; tail-feathers ashy grey at the base, very plainly freckled with black, the two middle feathers similarly marked, but slightly tinged with rusty brown, and transversely crossed with irregular fulvous bars, all the other feathers having a broad bar of black across the apical half of the feather, and tipped with greyish white; under surface of the body white, somewhat mottled with brown where the bases of the feathers show through; the breast slightly tinged with rusty red, but the long flank-feathers very distinctly marked with this colour, especially on the higher part of the flanks; under wing-coverts ashy brown, varied with spots and lines of white; bill blackish horn-colour; feet reddish brown, with a shade of grey; iris nut-brown; eyelid rich red. Total length 12·5 inches, culmen 0·8, wing 6·3, tail 4·7, tarsus 1·25.

*Obs.* The above description is taken from a fine adult male in our own collection, killed in Norway in January 1869. Another male, in Canon Tristram's collection, procured from Christiania in July, shows that there is little or no change in the summer and winter plumage of this Grouse. In this specimen the grey of the upper surface is a little purer, and there is a slight tinge of rufous on the crown, ear-coverts, and sides of the neck. Total length 12 inches, culmen 0·8, wing 6·4, tail 4·7, tarsus 1·25. Another specimen from Moscow, in Mr. J. H. Gurney's collection, obtained by him there on the 11th of September 1869, has a decided fulvous tinge on the under surface, and the upper parts not such a pure ash-colour; the tips of the tail-feathers are also entirely ashy, freckled with black.

Total length 13 inches, culmen 0·8, wing 6·1, tail 5, tarsus 1·25. This bird has not got the feathering of the legs so extended as in the foregoing examples, which are probably older birds. Canon Tristram has also lent us two males from his collection, obtained in Sweden by the late Mr. Wheelwright; and in both of them we notice a peculiarity which is not so fully developed in any of the three male birds examined by us. This is the junction of the cheek-stripe below the black throat, thus forming a conspicuous jugular patch of white, while the line of white on the sides of the neck is not continuous from the cheek-stripe, but is separated from the latter by the brown feathers of the neck. Altogether these last-named specimens are more decidedly tinged with rusty than any we have yet seen; and the development of the white gular patch forms a conspicuous feature. Total length 12–12·7 inches, culmen 0·8, wing 6·6–6·8, tail 5, tarsus 1·25.

*Adult Female.* A little smaller and in general appearance more rufous than the male, especially on the head, hinder neck, and chest; the grey of the lower back also less pure, all the feathers more or less tinged with rust-colour, a perceptible shade of which likewise pervades the centre tail-feathers. All the characteristic white spots and bands are less strongly developed, and are tinged with clear fulvous; the bands on the head and cheeks are particularly obscure, and the spots on the wing-coverts and outer scapulars not nearly so plain as in the male, the band down the sides of the neck being the only one which approaches to pure white. The ear-coverts are very distinctly rufous. Besides all these minor differences, however, there are certain trenchant characters by which the adult female may always be distinguished from the old male, viz. the absence of the black throat, which is fulvous white, slightly varied with blackish spots, and the feathered eyebrow. Total length 12 inches, culmen 0·8, wing 6·4, tail 4·7, tarsus 1·2. Females do not seem to vary so much *inter se* as do the males.

*Young Male.* In general colour like the old female, but much clearer grey on the lower part of the back and rump; the hinder neck more distinctly barred with fulvous, and the spots and streaks on the scapulars and wing-coverts distinctly of the latter colour. The head is clear brown, slightly mottled with blackish, and perceptibly crested, even in the very young stage. The throat is very pale fulvous, mottled with dusky; and the whole under surface is shaded with fulvous; the feet are pale yellowish; and the tarsus is very little feathered; the beak is horn-brown, with a great deal of yellow on the lower mandible.

*Obs.* The young bird certainly gains its full plumage within the year in which it is hatched; for the little chick we have noticed above, and figured in the Plate, has already begun to moult, and in the midst of the fulvous feathers of the breast some white-edged ones are appearing. We have received from our good friend Mr. Meves a full-grown young bird, killed on the 3rd of August, 1871, which is fast gaining the adult dress, but retains the marks of immaturity about the head and neck in the shape of fulvous spots on the feathers, which give these parts a mottled appearance: the upper surface of the body is very dark, and much varied with black, especially on the scapulars; and the black centres to the feathers show conspicuously on the under surface; the bill is blackish, with scarcely so much yellow on the lower mandible as in the before-mentioned chick.

Specimens of Hazel-Grouse from various localities certainly differ somewhat. We have not been able to examine a series complete enough to enable us to state accurately these variations from our own personal observation. Wheelwright, in his 'Spring and Summer in Lapland,' observed that in those that he shot at Quickjock, in Lapland, the plumage was lighter and prettier than in the Wermland Hazel-Grouse. Lord Lilford has lent us a specimen from Styria which is very much more rufous than any of the Scandinavian examples which have come under our notice. In 'Naumannia' for 1855 (*l. c.*), Brehm has named several subspecies; and, again, in the 'Journal für Ornithologie' for 1860 (p. 393) he gives the following particulars. "The European Hazel-Grouse," he says, "are easily divided into several subspecies. In the northern birds

the upper parts are generally grey, in others rusty grey, and again in others greyish rust-red. Those from Pomerania are the smallest; those from Kärnthen are like those from Trieste. The bird from Northern Asia (which Tilesius brought from Kamschatka) is a different species, both male and female lacking the black chin and throat, having this part white, and has been named by me *Bonasia albigularis*." Mr. D. G. Elliot, in his great work on the Grouse, has not referred to these subspecies of Brehm; and it is impossible for us, with our own limited material, to say how far these subspecies are well founded. We certainly believe, however, that the supposed species with the white throat will not be found to exist; probably a young male, or a mistake as to sex, has caused the author to believe in the possibility of such a contingency. On the other hand Radde, writing about his Siberian birds, says:—"I have before me old males from the Apfelgebirge, which, like all winter-killed birds from Siberia, have the back grey. Examples with rust-brown in the plumage, especially on the wings, are not wanting in Eastern Siberia; and Dr. Wulffius lately sent one, procured on the 10th October, 1860, at Port May." Then, again, Captain Blakiston writes about the bird in Japan:—"I brought home a single young male specimen, which Dr. Sclater considers to be of this species, and which Mr. Maximovitch, who had killed them, pronounced to be identical with those of the Amoor. The length was $16\frac{1}{2}$, and wing $6\frac{1}{2}$ inches. Eye hazel-brown, bill dark horn-colour, feet leaden flesh, over the eye orange-red. . . . . Four fine specimens, of which the males had black throats, were shot on another occasion in the thick woods about twenty-five miles north of Hakodadi." Dr. Taczanowski informs us that specimens from Southern Russia and Siberia are much brighter in colour than those of Central Europe; but as he does not notice any further peculiarities, and as Captain Blakiston distinctly mentions the *black throats*, we can hardly believe in the possibility of a distinct species being found in Kamschatka.

*Varieties.* There can, we think, be no doubt that the bird figured by Sparrman in the 'Museum Carlsonianum,' and named by him *Tetrao canus*, is only a white variety of the Hazel-Grouse; indeed the characteristic crest and unfeathered toes clearly refer to this species. Such varieties are sometimes seen; and Mr. J. H. Gurney, jun., procured one during his visit to Russia, and on his return to England gave it to Mr. F. Bond, in whose collection it still remains. Mr. Lloyd also remarks:—"Accidental varieties are occasionally met with. Nilsson speaks of an individual of a faded colour, in which the portion of the plumage that is usually black was brown; and Mr. Wilhelm von Wright of others as being "almost white, though more commonly greyish white, with faint approximation to the usual colour;" such a one, he tells us, he himself shot when residing in Finland, on the 12th September, 1824."

In Great Britain the present species does not occur; and it is most plentiful in the northern part of the European continent, whence it extends right across Siberia to Japan and Northern China. It is also found in Russia, Poland, and in certain parts of Germany, being met with in the Alps, Pyrenees, and in suitable localities in the countries bordering the Rhine.

In Norway, according to Collett, it is found in all conifer woods, from Smaalehnene up to Nordland, where Boie found it at Foldereid, 65° N. lat. In the west it is rare at Christiansand, and does not occur in Bergen Stift, unless in the parts nearest the fells. In the small dales, at a considerable altitude, it occurs sparingly, but is no longer found on the fells in the subalpine region. Mr. Collett further states that near Christiania it is as common as the Capercailzie, affecting localities where the conifer growth is intermixed with non-evergreen trees, especially birches, and the woods are full of hillocks. It frequents the ground less than the Capercailzie and Black Grouse. Nilsson says that it is not found in Southern Sweden; near Rimforssa and Kisa, in Linköpings Län, it is not rare, but more so at Säthälla, and near Bokara, and Åhult, in Calmar Län. It is found near Uddevalla and in Bohuslän, is tolerably abundant in Östergöthland, rare near Stockholm, but abundant in the north of Sweden. In Lapland Löwenhjelm

found coveys near Quickjock; and, according to Von Wright, this bird extends its range in Lapland to Kengis, and sometimes to Muonioniska. In Finland it is not rare, and, according to Meyer, is common and resident in the Baltic provinces. It has not been as yet included among the birds of Denmark; but Kjærbölling believes that it is an inhabitant of Holstein, which was formerly a province of that kingdom: this is stated by Mr. Lloyd in his 'Game-Birds of Sweden and Norway' (p. 113).

Naumann says that it is common in some parts of Prussia, Poland, and Hungary, but in Austria, Bohemia, and Silesia it is rare. In Bavaria, in the Odenwald, in Thuringia, and the Harz it occurs occasionally. In Germany it is resident, but in the autumn travels from one place to another, occasionally travelling some distance. They generally wander in families, sometimes in large flocks, which, however, do not keep close together. Towards the spring they return to their old haunts and separate into pairs. In the more recent work by Herr Borggreve, on the distribution of birds in Germany, the present species is recorded as resident, having about the same range as *Tetrao urogallus*, but more numerous where the latter is rare or wanting, on the mountains on the left side of the Rhine; whereas in the mountains of the Weser, where the Capercailzie is comparatively numerous, the Hazel-Grouse is almost killed out. Schlegel states that in Holland it has been seen at Groningen and near Nymegen, and De Selys-Longchamps observes that in Belgium it is rarer than the Blackcock in the same localities. It inhabits the wild forests of the Ardennes, near the Prussian frontier; near Malmédi it is commoner. In autumn it sometimes straggles as far as Liége, following along the woods on the banks of the Ourthe.

Our friend Mr. Carl Sachse, of Coblentz, tells us that in that neighbourhood "it is found in tolerable numbers in the hill-country where underbrush is to be seen, and always near ravines which contain springs; and when the pairs frequenting such a locality are killed they are soon replaced by others. With us they breed in April; but I have received eggs in June, the first sitting having probably been destroyed: the bird can easily be taken on the nest. In the middle of September, when the cold sets in, they wander, and are found in localities where they are not met with at other seasons, and which are not suitable to their habits. At this season they are stupid and easy to catch. Three were killed in the garden of an hotel here; and another flew through an open window and broke its neck against an arm-chair; it could scarcely have been scared by a Hawk, as none was visible at the time.

Krœner notices the Hazel-Grouse as occurring in the Vosges Mountains; and, in addition to this locality, MM. Jaubert and Barthélemy record it as an inhabitant of the Pyrenees and Alps. Bailly, in his excellent work on the ornithology of Savoy, remarks as follows:—"The Gélinotte inhabits more especially the alpine forests of Switzerland and Germany, the wooded mountains of the Pyrenees, the Vosges, Dauphiné, and the Basses-Alpes. In Savoy it is found throughout the year, more particularly in the mountainous parts of la Tarantaise, Haute-Savoie, and Faucigny; near Chambéry it is rare, but is rather more numerous in the forests of Bauges and in the woods of the neighbouring mountains of Chautagne, Rumilly, and Annecy."

Seidensacher says it is by no means rare in the mountain-forests near Cilli, in Styria, breeding in April, and laying from six to nine eggs. Count C. Wodzicki writes respecting its occurrence in the Carpathian Mountains of Galicia as follows:—"In the beech-woods, especially in

the low growth, the Hazel-Grouse are numerous, and range up to an altitude of 3000 feet. The stupidity of this bird, and the open situation of its nest, prevent it from increasing largely, although here but few are killed by human agency. I have often seen how greedy and phlegmatic they are. In the winter they stuff their crops so full of birch- and hazel-buds that they can scarcely move, and become then an easy prey to birds of prey, Foxes, and Martens; often scarcely one tenth of their number survive the winter. I once wanted to try if it were possible to increase them by preserving, and gave orders that in one district none should be shot for seven years; but still their numbers were not larger. Everywhere they appear to be found but singly." Dr. L. Taczanowski informs us that the Hazel-Grouse is still found in all the forests of Poland, but by degrees is growing rarer. It is resident, but in autumn makes short journeys from forest to forest, and is then occasionally met with in the bushes in fields and in orchards. During his journey through Southern Siberia, Radde states that on the 3rd of July, 1859, he found fledged young in the eastern Sajan mountains. Middendorff says that is "common everywhere in Siberia. On the lower Jenesei I saw the last, below the polar circle, at Goróschinskoje; and a little to the north of this, at Ustj-Kurejskoje, they are said to decrease greatly in numbers, and do not extend higher than about 69° N. lat. In South-eastern Siberia they occurred everywhere abundantly, both on the Stanowoj mountains, on the south coast of the Sea of Ochotsk, and everywhere in Mantschuria." Dr. von Schrenck writes as follows:—"As far as my experience goes, the Hazel-Grouse is the commonest and most numerous of the game-birds from the south coast of the Sea of Ochotsk to the Bay of Hadshi, on the island of Sanghalien, and from the mouth of the Amoor to its Daurian branches, and is found everywhere, and at all seasons of the year. Although there is scarcely a place where it is wanting, still in the north it frequents especially the groves on the river-sides, of birch, aspen, poplar, alder, and willow, and in the south the precipices covered with thin woods and dense underbrush, as also the rocky shores of the river." Dr. von Schrenck remarks on its great tameness, and says that he has several times shot a couple out of a covey sitting on a tree without the rest taking flight. He found a nest, containing eggs, on the 4th (16th) of June, near Lake Kidsi. Swinhoe includes it in his recent list of the birds of China on the authority of Père David, who has met with the species in Northern Chelee. Captain Blakiston obtained it in Japan, and writes:—"This is, I believe, the first instance of this bird being found in Japan; probably it does not inhabit the more southern part of the empire." Mr. H. Whitely also remarks:—"I obtained three specimens (an adult male and female, and a young male) of this bird from native bird-catchers. It is found in the large forests in the neighbourhood of Hakodadi."

The Hazel-Grouse is a true forest-bird, but frequents especially the non-evergreen woods where birch and aspens abound, and where plenty of blueberries or other berries are to be procured. Throughout the daytime it is continually wandering about on the ground, and will traverse considerable distances. The latter part of August is the best time to shoot the Hazel-Grouse; and Dresser, during his stay in Finland, had many excellent days' sport after these birds. The best mode of procuring them is not by hunting them with a dog, but by calling them with a small whistle. The sportsman has only to walk quietly through the wood, and every now and then to mimic the call-note of the bird, and he will soon be answered; then, by keeping quiet and judiciously calling, the bird may often be enticed within a short distance close to the caller.

When a covey is scared up, they immediately settle in a tree, and may be shot one after the other; for they are not shy, and seek safety in sitting motionless, squatting close to the branch, and trusting to concealment alone. It is difficult for a person who has not shot these birds to imagine how very easy it is to look carefully all over a tree on which the birds are sitting and still not be able to discover a single one; for the colour of the plumage harmonizes so well with the dark brown of the tree-bark that the bird appears to form a portion of the branch on which he is sitting. Unlike the American Hazel-Grouse (*Bonasa umbellus*) this species will not tree to a dog, especially if the latter gives tongue, but will immediately leave the tree and take to flight. Mr. Collett, however, informs us that dogs are trained to hunt after this bird, and when it flies up in the tree they will sit twelve or fifteen paces distant and watch without barking, or only making a very low noise. The flesh of the Hazel-Grouse is especially tasty; and epicures hold that the breast is a most delicate morsel. To the St.-Petersburg and Moscow markets whole sledge-loads are sent for sale from the Governments of Jaroslaf and Archangel, where this bird abounds, and bring comparatively high prices. They are seldom brought into our London market; but an occasional bird or two come over from Norway with the other game.

Respecting the nidification of the Hazel-Grouse we have pleasure in giving the following excellent notes sent to us by our friend Mr. R. Collett, of Christiania:—"In its breeding-habits it differs much from the other Wood-Grouse, as it is monogamous, each male having but one female (who, however, is not always a paragon of fidelity), whereas the Capercailzie and Black-cock have several mates. It is, however, so sociable in disposition that as soon as the young are full-grown the whole family gather together and wander about until the commencement of the winter. Then they scatter somewhat—as each male seeks a mate in December, and the pair live together until after the next breeding-season. After pairing, the male leaves the female and lives a solitary life as long as she is sitting, not honouring her again with his company until the young are full-grown. Early in May the female seeks out a solitary and concealed place in the densest part of the wood, where she scratches a hole and places her eggs on a simple bed of dry herbage. The nest is generally placed amongst the heather, or under a bush, but always carefully concealed; and the female sits so close that she may almost be trodden on. The number of the eggs varies according to the age of the female; for middle-aged females lay as many as fourteen, whereas young and very old females lay from eight to ten eggs."

Our friend Dr. Taczanowski has sent us a note as follows:—"It feeds principally on buds and male flowers of different trees and bushes, such as the hazel and birch, seeds of many woodland plants and conifers, also on fruit, especially that of the service tree. It also feeds much on insects in summer. About the end of April or early in May the female commences nidification. She scratches a cavity about 8 inches in diameter by 6 inches in depth, at the foot of a bush or in an open place, and lines it with a few dry grasses or leaves, where she deposits from eight to fourteen eggs. She sits so closely that she may be caught on her nest. When the young are hatched she attends to them until they are about half-grown; and then the brood disperse, but often reassemble." Naumann writes:—"In the summer they are found on the ground, and hide amongst the underbrush or in the grass, but in the autumn and spring are often to be seen on the trees, seldom, however, high up, but generally on the lowest branches. In the winter they burrow in the snow, partly for security and partly in search of food, and often form long

burrows. If possible they roost on the branch of a tree or else on the ground, and in the winter in the snow."

"This Grouse," says Bailly, "loves solitude, and affects the forests of pine and larch, the hazel-thickets and beech-growth; sometimes it is met with in places overgrown with birch bushes, heather, myrtles, raspberry-bushes, and ferns, and free from trees, but close to woods, where it retires after feeding. . . . . .

"The Gélinotte appears to me to be always monogamous. During the pairing-season the males are not quarrelsome like the Blackcocks and Capercailzies; nor like those birds do they fight for possession of the females. He generally remains with the female with which he has paired during the season of incubation, and accompanies her when she leaves the nest in search of food. When the young are hatched he goes with her as she leads them about, and like her calls to collect the family. In Savoy they lay in the month of May, forming a simple nest of straws, dry leaves, and flexible roots, on the ground, under a hazel bush or heath, or a bunch of ferns, laying from nine to fifteen eggs.

With regard to the food of the Hazel-Grouse, we cannot do better than translate the following notes from Naumann's most excellent work on the Birds of Germany:—"In the spring it feeds on buds and the catkins of the hazel, birch, and alder, as also the berries of the juniper-bush, but seldom on the buds of this or of fir trees, which, however, it does not disdain during the winter in places where berries are scarce. Later on it eats the young shoots of the heath (*Erica*), of grasses, clover, and forest plants, as also of the blueberry bushes; but towards the summer it feeds principally on insects, eating all sorts of beetles, grasshoppers, flies, spiders, ants, and ants' eggs, insect larvæ, and small worms, which it scratches out of the ground; small snails are also found in its crop. This insect food, however, is always mixed with plants, buds, and seeds. During the summer it appears to be fond of and feed principally on the red berries of the *Sambucus racemosa* and the *Vaccinium myrtillus*, but also eats strawberries, currants, raspberries, and blackberries (*Rubus saxatilis* and *R. chamæmorus*), as also berries of *R. fruticosus*, *R. cæsius*, *Vaccinium vitis idæa*, *Rubus arcticus* (in the north), *Vaccinium uliginosum* and *V. oxycoccus*, *Empetrum nigrum*, and *Arbutus uva ursi*. It is said to eat the berry of *Daphne mezereum*, which is poisonous to human creatures, and also the berries of *Lonicera xylosteum*. In the autumn it feeds greedily on the mountain-ash berries (*Sorbus aucuparia*); and cranberries, as they do not soon dry or fall, form a chief portion of its food in the winter. It eats the berries of the common elder, the thorn, and the wild rose, as also the seeds of trees and plants, of conifers, birch, and alder (in the north, of the dwarf birch, *Betula nana*), and beech-nuts." Mr. Collett examined the contents of the stomach of a half-grown young bird shot in Nordmarken, near Christiania, 25th of July 1868, and found it to contain vegetable matter only, viz. unripe berries of *Vacc. vitis idæa*, several berries (ripe) of *Myrtillus nigra*, and seeds of *Trientalis europæa*, *Melampyrum sylvaticum*, and *Viola canina*.

No better account of the habits of the Hazel-Grouse will be found than that given by Mr. L. Lloyd, in his book on the Game Birds and Wild Fowl of Sweden and Norway, from which we make the following extracts, in order to render our history of the species as complete as possible:—"The flight of the Hazel-Hen is very noisy, but short withal, seldom extending beyond a couple of hundred yards. During both summer and winter it is mostly on the ground,

but when flushed invariably takes refuge in a tree, rarely on its top, however, as some tell us, but generally about halfway up, and amongst the most leafy of the branches. Where these birds roost during summer and autumn I know not; but in the winter time there is reason to believe they often pass the night in the snow. In Finland, Mr. Wilhelm von Wright tells us, the Hazel-Hen is found in larger or smaller packs, according to their greater or less abundance in the district. It is not for me, of course, to question the accuracy of so good an observer; but singularly enough I myself never saw or heard of more than a single family in company. Sweden, however, is not Finland; and the habits of birds may vary in different countries. In Scandinavia the Hazel-Hen is classed as a *ståndfogel*, or stationary bird; and beyond doubt it is about the most so of the genus *Tetrao*. The Capercailzie and the Blackcock, as shown, occasionally migrate, for a time at least, from the locality where they were bred; but not so with the Hazel-Hen, which would seem pretty much to confine itself to one district. Such at least is the result of my experience, which has been considerable; for, when roaming the forest, a day seldom passed that we did not meet with some of these birds. . . . . Its food in the autumn consists of worms, larvæ, and the various berries with which the Scandinavian forests abound; but in the winter, when the snow lies deep on the ground, it subsists chiefly on the tender tops of the birch and the alder, especially the latter. I have then also found in their crops the stalks and tops of the bleaberry. The pairing-season usually commences at the end of March or beginning of April, though the time is somewhat dependent on the state of the weather. The sexes attract each other by a peculiar and almost melancholy cry, that of the male consisting of a long-drawn whistle, followed by a chirp *tĭ hih tĭ tĭ tĭ tĭ*; whilst that of the female is more simple, being often only a single sustained *tih*, vibrating or quivering towards its termination.

"The Hazel-Hen is readily domesticated. We are told, for instance, by Mr. Wilhelm von Wright that 'as an aviary bird it is beyond every thing tame and amusing to its owner. The more people are about, the sooner will it become reconciled to confinement. The first days of its captivity, however, it will not eat any thing, but endeavours to conceal itself in a corner of its prison-house; for which reason it is best to leave it to itself, after placing food and water before it. Red whortleberries and juniper-berries are the best to give it in the first instance; but hemp-seed, barley, buck wheat, and other kinds of grain it eats with avidity after it has once partaken of them. To induce it to eat, some berries should be put in the vessel containing the water, which it is then sure to observe. As with domestic fowls, it eats, when in confinement, meat, whether raw or boiled. It should be constantly supplied with dry sand placed in a box, or something similar, as it daily 'dusts' itself. Thus provided, especially should the sun shine, it forms for itself a hole with its beak in the sand, which it throws over its body. Afterwards it lies first on one side and then on the other, or, it may be, on its back, and with its eyes half shut. Oftentimes it mounts on some little elevation in the coop and whistles. One is seldom fortunate enough to rear the chicks when taken very young, most probably because the proper food cannot be procured for them.'"

M. Sachse informs us that they are sometimes caught in the snares set for Fieldfares, and baited with berries; and snares are also placed for them, in sticks bent in a bow-shape and stuck in the ground.

The eggs of the Hazel-Hen are rather elongated in shape, tapering slightly towards the

smaller end, and in colour are pale yellowish, sometimes with a reddish tinge, much lighter in colour than the eggs of the black game, and are sparingly spotted with rufous. Some varieties are almost unspotted, or only marked here and there with small dark red dots. A series of eggs in Dresser's collection, procured in Styria, measured from $1\frac{26}{40}$ by $1\frac{6}{40}$ to $1\frac{28}{40}$ by $1\frac{7}{40}$ inch, and, compared with the eggs of the American representative of this species (*B. umbellus*), are more elongated in shape and much more marked; indeed the eggs of the Ruffed Grouse are generally unspotted. Dr. E. Rey informs us that five eggs in his collection, taken in Westphalia, average 40·3 by 29·2 millimetres, the largest measuring 41·5 by 30·0, and the smaller 39·25 by 28·5.

The figures in the Plate represent an adult male and female and a good-sized chick, all in our own collection. We have described these same birds in detail in our accounts of the species at the commencement of the article, in the preparation of which we have at the same time examined the following specimens:—

*E Mus. Sharpe and Dresser.*

*a*, ♂. Norway, January 1869 (*W. Schlüter*). *b*, ♀. Sweden, January 1870 (*W. Schlüter*). *c*, ♀ *ad.* Norrland, August 3rd, 1871. *d*, ♀. Wermland, winter of 1871. *e*. Russia (*Dr. Renard*).

*E Mus. H. B. Tristram.*

*a*, ♂. Christiania, Norway, July 1852. *b*, *c*. Sweden (*Wheelwright*).

*E Mus. J. H. Gurney, jun.*

*a*. Norway, October 1870 (*bought in Leadenhall Market*). *b*, ♂. Moscow, September 11th, 1869.

*E Mus. Lord Lilford.*

*a*, ♂. Southern Germany (*Seidensacher*).

## Genus TETRAO.

*Tetrao*, Linnæus, Syst. Nat. i. p. 273 (1766).
*Urogallus* apud Kaup, Natürl. Syst. p. 180 (1829).
*Lyrurus* apud Swainson, Faun. Bor.-Am. p. 497 (1831).

The true Grouse inhabit the Palæarctic and Nearctic Regions, three species being found as residents in the Western Palæarctic Region. They frequent woods, groves, heather-covered localities, and especially places which are sparingly overgrown with trees, and open places in the forests. They walk with ease, and run so fast that it is no easy matter to overtake a wounded bird; but they are often found on trees, and in the winter feed to a large extent on buds and soft twigs, both of conifer and non-evergreen trees, birch catkins being a favourite staple of food with some species. They are polygamous, the males meeting at regular resorts during the pairing-season and fighting desperately for the possession of the females.

The nest is a mere hollow scratched in the ground, and sparsely lined with grass; and the eggs, which are numerous, are yellowish white or yellowish grey, blotched and spotted with orange and rufous. When the young are hatched they are able to run almost directly, and are carefully tended by the female, but utterly neglected by the male.

The food of the Grouse consists of seeds, fruits, berries, insects of various kinds, and the soft twigs and buds of several species of forest trees.

*Tetrao urogallus*, the type of the genus, has the bill rather short, strong, curved, the upper mandible decurved to the tip, which is narrow, rounded, sharp-edged; nostrils lateral, basal, oblong, concealed by the short feathers of the nasal membrane; above the eyes is a semilunar space of bare papillate skin; wings short, broad, curved, the first quill shorter than the secondaries, the second shorter than the sixth; tail long, rounded; legs rather short, strong, feathered to the base of the toes, which are bare, scutellate, with a marginal series of obtuse scales, which project like the teeth of a comb; claws short, strong, arched, the edges thin, the tip obtuse.



BLACK- GROUSE

TETRAO TETRIX

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# TETRAO TETRIX.

(BLACK GROUSE.)

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*Urogallus minor*, Briss. Orn. i. p. 186 (1760).
*Tetrao tetrix*, Linn. Syst. Nat. i. p. 274 (1766).
*Le petit Tetras*, Buff. Ois. ii. p. 255 (1772).
*Urogallus tetrix*, Kaup, Nat. Syst. p. 180 (1829).
*Lyrurus tetrix*, Swains. Faun. Bor.-Am. p. 497 (1831).
*Tetrao juniperorum*, Brehm, Vög. Deutschl. p. 509 (1831).
*Tetrao rupestris*, Brehm, tom. cit. p. 513 (1831).
*Lyrurus derbianus*, Gould, Proc. Zool. Soc. 1837, p. 132.
*Tetrao derbianus* (Gould), G. R. Gray, Gen. of Birds, iii. p. 516 (1849).
*Tetrao peregrinus*, Brehm, Naumannia, 1855, p. 287.
*Tetrao ericeus*, Brehm, ut suprà.

*Black Grouse*, *Blackcock* (♂), *Greyhen* (♀), English; *Colleach-dubh* (♂), *Liath-cheare* (♀), Gaelic; *Tétras lyre*, French; *Birkhahn* (♂), *Birkhuhn* (♀), German; *Berkhoen*, Dutch; *Cua furuda*, Spanish; *Aarhane*, Danish; *Orre*, Swedish; *Aarfugl*, Norwegian; *Tetereff*, *Kosach*, *Poliasch* (♀), *Riadbushka*, Russian; *Zon*, Bashkir; *Tar* (♂), *Kentar* (♀), Ziran.

*Figuræ notabiles.*

Buff. Pl. Enl. pl. 172 (♂), 173 (♀); Werner, Atlas, *Gallinacés*, pl. 5; Gould B. of Eur. pl. 250; Naumann, Vög. Deutschl. pl. 157. figs. 1 & 2; Fritsch, Vög. Eur. pl. 31. figs. 3 & 4; Elliot, Monog. Tetraon. pl. xii.; Kjærböll. Orn. Dan. pl. xxviii. c; Roux, Orn. Prov. pls. 252 (♂), 253 (♀); Sundevall, Sv. Fogl. pl. xxxiii. figs. 1 (♂), 2 (♀), 3 (♀ steril.).

♂ *ad.* niger: capite, collo, dorso et uropygio nitore cæruleo splendentibus: supra oculos maculâ nudâ papillosâ coccineâ: remigibus nigricanti-fuscis in pogonio externo vix griseo limbatis: secundariis et tectricibus alarum majoribus ad basin albis, maculam magnam albam formantibus: caudâ nigrâ, bifurcâ, rectricibus tribus exterioribus elongatis et curvatis: subtùs niger: abdomine griseo variegato: subalaribus purè albis: subcaudalibus albis, vix brunneo notatis: pedibus brunneis: rostro nigro: iride brunneâ.

♀ *ad.* mari dissimilis et minor: caudâ minùs quàm in mari bifurcâ: capite et collo ferrugineis, nigro transfasciatis: dorso, uropygio et caudâ nigris ferrugineo transversè fasciatis: remigibus brunneis, in pogonio externo pallidè ferrugineo marmoratis, secundariis nigricanti-brunneis pallidè ferrugineo marginatis, ad apicem et basin albidis: caudâ nigrâ ferrugineo transfasciatâ, ad apicem sordidè albido terminatâ: subtùs rufescenti-brunnea, nigro fasciata et notata: abdomine griseo-albo lavato, plumis albido apicatis: tibiis et tarsi plumis griseo-albis, indistinctè fusco fasciatis: subcaudalibus albis, fasciis rarioribus nigris notatis et albido apicatis: subalaribus albis, nigro-fusco fasciatis.

*Pullus* suprà luteus: dorso et uropygio rufescente lavatis et conspicuè nigro lentiginosis: alis ferrugineis, nigricante maculatis, fasciis duabus isabellinis transversè notatis: subtùs pallidè luteus, pectore pallidè ferrugineo lavato.

*Adult Male* (St. Petersburg). General colour rich black, with blue reflections on the head, neck, back, and rump; over each eye a large red warty comb, extending in front of the eye almost to the base of the bill; quills blackish brown on the outer web, washed with dull grey, shafts white; secondaries and larger wing-coverts white on the basal portion, the former constituting a conspicuous white alar bar, the latter having the white portion almost concealed by the lesser coverts, which are black, not, however, glossed with blue like the back; inner secondaries rather dull black; tail black, the outer rectrices much elongated and curved outwards; underparts black, on the thighs and lower part of the abdomen varied with greyish white feathers; under wing-coverts pure white; under tail-coverts white, with a few blackish brown marks; feet dark brown; bill black; iris dark brown. Total length 22 inches, culmen 1·1, wing 10·4, tail, in the middle, 4·2, outer rectrices 8·5, tarsus 1·8.

*Obs.* According to Von Wright the old male bears a somewhat different plumage during the summer season, from June to August, the head and neck being then rusty grey and black mixed, the throat white, marked with black; a broad black band passing under the eye from the bill backwards; specimens he kept in confinement also underwent this change.

*Adult Female.* Upper parts rich rufous, slightly washed with grey, all the feathers banded or marked with black; head more rufous than the rest of the upper parts, and the rump darker; quills dull brown, on the outer web marbled with rusty yellow; secondaries dull blackish brown, marbled with yellowish rufous, at the base and tip white, forming two indistinct white bands across the wing; tail forked, the central feathers being almost three quarters of an inch shorter than the outer ones, in colour black, marbled with rufous brown, and tipped with dirty white; underparts rufous, banded and marked with black; breast most rufous, and less marked with black than the other parts; centre of the abdomen marked with greyish white, most of the feathers being tipped with that colour; feathers on the thighs and legs greyish white, indistinctly marked with dull brown; under tail-coverts white, banded with brown and black, and broadly tipped with white; under wing-coverts white, barred with blackish brown; soft parts as in the male. Total length 15 inches, culmen 1·2, wing 8·8, tail 3·3, tarsus 1·85.

*Obs.* Sterile females are by no means uncommon, and are distinguishable by their darker colour and longer and to some extent curved tails, which resemble those of the males in shape though not in colour. Two unusually fine and old specimens, obtained at the St.-Petersburg market, are in my collection; and one of these I have figured. This bird has the head and neck much darker than in the adult female above described, some of the feathers being bluish black towards the tip; the back is much greyer than in the ordinary female, and the rump glossed with purplish black; tail shaped like that of the male, the outer rectrices dull black, marbled on the outer web with rufous, the inner ones marbled on both webs with rufous and grey, all being tipped with white; wings much greyer than in the adult female, and the white bands much more fully developed; chin white, marked near the base of the mandible with black, throat and fore part of the breast rufous grey, barred with glossy steel-black; rest of the underparts dull blackish, most of the feathers with a grey central line, and tipped with that colour; flanks indistinctly marbled with grey; legs and thighs as in the adult female; under wing-coverts white, barred with black near the edge of the wing; under tail-coverts white, sparingly marked with brown.

*Nestling* (Wermland, Sweden, July 1872). Upper parts sulphur-yellow, on the back and rump washed with rufous, and conspicuously blotched with black; wings rufous, marked with blackish, and having two

conspicuous bands of a dull cream-colour across them; underparts sulphur-yellow, washed with pale rufous on the breast.

*Obs.* In plumage the Blackgame is often subject to considerable variation. Mr. Collett informs me that he has "seen many peculiar varieties, chiefly amongst the males, from various parts of Norway. Some are almost uniform white in colour, others speckled with white; and in Southern Norway a variety having the back and scapulars spotted with white is not uncommon, and I have seen at least a dozen such birds in the various Norwegian museums. Sterile females are found annually. They agree with the males more or less in plumage, but are easily recognizable by their under tail-coverts, which are almost always pure white, unspotted, and by having the lower portion of the throat more or less white. Only very old sterile females have the blue neck and curved tail-feathers. Sterility is not always a sign of old age, as young sterile females are met with having diseased ovaries, which appears to be the general cause of sterility."

The Black Grouse is found from Scandinavia down to Spain and Italy, and eastward through Siberia into China.

In Great Britain it is tolerably numerous, but more so in the north than in the south, as it cannot exist where cultivation is carried on to a great extent and its favourite moors are utilized for the purposes of agriculture. Yarrell states that "in the southern parts of England, Black Grouse are found in Sussex, on Ashdown forest, and on St. Leonard's forest near Horsham, and from Pudmores along the brows of the heath-hills towards Tilford, and again from Tilford up to the Devil's Punch-bowl on Hindhead. In 1815, H. M. Thornton, Esq., of Chatham, brought two Blackcocks and three Greyhens from Holland. These birds were turned out on the Hurtwood, a tract of heath between Guildford and Dorking. At that time this species of game had been extinct in that part for fifty years; but these foreign birds, being well preserved, have replenished the district. They bred the following spring after their introduction; and the first nest observed was within a hundred yards of the spot where they were first turned out. Some of the descendants of these birds have strayed to the heathy districts between Farnham and Bagshot, and have extended themselves as far as Finchampstead, in Berkshire. Black Grouse occur again in Hampshire, on the New Forest, and thence along to the westward in Dorsetshire; they are found on Dartmoor and Exmoor, in Devonshire, and are abundant on the property of Lord Caernarvon near Dulvarton, on the north-eastern border of Devonshire, and the heaths of Somersetshire, and are found in Worcestershire and Staffordshire; they are found also on most of the extensive heaths of Shropshire, and on the Besyn chain near Corwen. They are included in the Catalogue of the Birds of Lancashire, and from thence become more plentiful on proceeding northwards." In Somersetshire it is no longer abundant; for Mr. Cecil Smith, of Taunton, informs me that "it is now only an occasional visitant to the Blagdon hills and some other parts of Somerset, where formerly it used to be more numerous. On the Brendon hills and the wild open country from Dunster to Dunkerry and Exmoor it still continues a tolerably numerous and regular inhabitant. In some of these parts, however, it is, I fear, being gradually improved off the face of the earth by mining and agricultural operations." In Norfolk, Mr. Stevenson writes, it is "a resident, though entirely confined to one district in the neighbourhood of Lynn, where alone the various attempts to naturalize this species have proved successful, the birds either dying in a natural way, or being killed off, beyond the scope

of their preserved boundaries, owing to the want of a sufficiently extended range of wide open country. In that neighbourhood, however, it seems probable that this species has existed for a very long period, fluctuating in numbers, but never wholly extinct; and of late years they appear to have increased considerably about Snettisham and Dersingham, on the L'Estrange estate, and on property of Mr. Hamond at Bawsay, and Leziate, in the same neighbourhood, where an ample extent of wood and heath, wild in the extreme, and but slightly preserved for other game, has afforded the three most essential conditions of space, food and quiet. In this locality several couples are annually killed during the shooting-season; and they are also found in the autumn at Sandringham, on the estate of His Royal Highness the Prince of Wales, though I am not sure that they also breed there." Mr. Cordeaux, in his handy little work on the birds of the Humber district, writes that "it was introduced some years since in the wild uncultivated district near Frodingham, on the Trent side; and I have seen an old cock bird that was shot in that neighbourhood. Towards the close of the shooting-season of 1871–72, the Rev. H. G. Southwell shot a Greyhen in the parish of Nettleton, near Caistor."

To the north it becomes much more numerous, and in Scotland is one of the common game birds in suitable localities throughout the country. Mr. R. Gray speaks of it as common on all the mountain-ranges, hilly districts, and patches of upland heath, extending from the north of Sutherlandshire to the Mull of Galloway. It is likewise found plentifully on many of the Inner Hebrides. On Mull it is much commoner than the Red Grouse, as I have been informed by Mr. Graham; and on Islay, according to Mr. Elwes, it is increasing rapidly in the north part of the island, although that portion of it is bare of cover. In autumn it regularly frequents the stubble-fields there, morning and evening, to feed. I have observed the same habit of the species on the Loch-Lomond range of hills, where it is very abundant. In this district the birds are found from a moderate elevation to the summit of the hills on the west side; but in the breeding-season the females appear to come nearer the glens, especially those fringed with birch trees, at the root of which the nests are often placed.

Being anxious to know whether black game could be obtained within sight of so large a city as Glasgow, I applied to Mr. G. Shirlan, of Motherwell, who has kindly sent me the following note:—"The moorland that I sometimes take a shot over is in the upper part of the parish of Carluke, from which, in a clear day, St. Rollox is distinctly visible. Black game are scarcer than Red Grouse, which are plentiful: the former breed sometimes well out in the moors on suitable feeding-grounds, such as the margin of a watercourse, where there is plenty of bent-grass and rushes; but, for the most part, you find them on cultivated ground on the outskirts of the moor, and the more readily if there should be a scraggy plantation, high beech and birch hedges, and a meadow close by. It has become of late years tolerably common in the south-west of Scotland. It wanders to the very verge of the rocky headlands, Burrow Head, and the Mull of Galloway, and even to the heights above Port Patrick, whence it can, by lifting its head above the heather, see the Irish coast." Though, as stated by Mr. Gray, it occurs within sight of the Irish coast, it is not found in that country; and Thompson writes that he has never met with any satisfactory evidence of its ever having been indigenous in Ireland.

It has not been met with on the Færoes or in Iceland; but in Norway it has, according to

Mr. Collett, "a wider distribution than the other two species of the genus *Tetrao*, and is certainly more numerous.

"The Capercaillie is found further north, and breeds in the fir-woods of Alten and South Varanger in 70° N. lat., whereas the Black Grouse does not range further than the birch-forests of Tromsö and the valley of the Maalsch, in about 69½° N. lat.; and the Hazel-Grouse scarcely seems to pass into the Arctic circle. The Capercaillie, as well as the Hazel-Grouse, are so strictly confined to the conifer-woods, that they scarcely occur on the west coast, where the conifer-woods are almost wanting; the black game, on the contrary, thrives well in the birch-woods of Western Norway.

"On the fell-side this species even passes above the birch belt; consequently its breeding-haunts in some instances coalesce with those of the Dalrype (*Lagopus albus*); and thus the singular hybrid the Rypeorre (*Lagopus tetrici-albus*); is occasionally produced." Barth records it from the Lofoten Islands; common on Langö and Hasselö "in localities where both birch and juniper grow; and it is said to have been common on Moldö;" and Nilsson states that in Sweden it is found in almost all woods, in the mountains as well as in the level country, from Skåne up into Lapland, and especially affects birch-woods. On the fells it ranges into the birch and pine regions, but is rare above the fir growth." In Finland, Professor Malmgren informs me, it breeds up as high as 67½° N. lat.; and I found it tolerably numerous, and obtained not a few of its eggs when at Uleåborg. In Northern Russia it is numerous, and said to be especially so in the Government of Archangel. Judging from the great numbers sent us to the markets at St. Petersburg, and the low prices at which I have purchased them there, it must be a very common species throughout Northern Russia." Mr. Sabanäeff writes that it is generally distributed throughout the Ural, and especially numerous in the birch-woods of the south-eastern slopes of that mountain-range; and Mr. Taczanowski informs me that it is "common in Poland, where it is met with chiefly in the swampy portions of the country, but it is much more numerous in Lithuania and Eastern and Western Russia. Borggreve includes it as a resident and partial migrant throughout North Germany, but, excepting in Prussia and Silesia, nowhere common. Mr. R. Blasius states that between 1841 and 1848 it bred in the Sophienthal, Brunswick, but has not been observed there since the latter year. In Denmark it used to be common on the heaths of Jutland, Slesvig, and Holstein, but is now only very rare in that country. In Holland, Professor Schlegel states, it is only found in the heath-covered moors of Overijssel, Drentsche, and Groningen. Baron de Selys-Longchamps writes that it is found in all the heath-covered districts towards Luxemburg and the Prussian frontier. De la Fontaine records it as now restricted to the Ardennes, the Canton of Salm, occasionally appearing in those of Bastogne and Clervaux; and Degland and Gerbe state that it is a tolerably common species in France (not naming any particular locality), and especially so in the wooded mountain-districts.

It does not appear to occur in Portugal; but Mr. Howard Saunders informs me that it "is resident and tolerably abundant in the eastern portions of the Pyrenees, where the Catalans know it well by the name of *Cua furuda*, or 'forked-tail.'" Passing eastward again we find it recorded by Bailly as "common and resident throughout the wooded portions of the Savoy Alps." Bettoni figures it amongst the birds which breed in Lombardy, and states that it nests in the mountains above the Lata district, although rapidly becoming scarce. Salvadori writes that it is "resident

in the mountainous portions of Liguria, but elsewhere accidental;" and Savi says that it "has but rarely been obtained in the Apennines, and altogether Tuscany is not suited to its habits." Doderlein records it as accidental in Modenese.

In Greece it does not appear to occur; but in Southern Germany it is common in suitable localities. Mr. L. Stejneger refers to it as not uncommon in Meran, in the Southern Tyrol. Seidensacher records it as found, but by no means common, in the Bacher mountains of Styria; the Ritter von Tschusi Schmidhofen as common in Austria. In Bohemia, Fritsch writes, "it has a wider range than the Capercaillie." He saw it in the willow-growth on the Elbe, near Brandeis, in the autumn; and it occurs at Kuchelbad and Komoran, near Prague. The game-list shows that in 1857 2300 head were killed in Bohemia, and in 1864 1336. Albinoes are not unfrequently obtained, and are said to occur regularly in one particular part of the Böhmerwald. Count Casmir Wodzicki writes that "it is rare in the Carpathians, but is by no means uncommon in the low woods of the Tatra mountains, and is resident in the almost impenetrable thickets, only coming out to the bare spots amongst the rocks during the pairing-season." In Southern Russia it does not appear to occur so far south as the Crimea; but it is certainly found as far south as Ekaterinburg.

To the eastward it occurs through Siberia as far as China. Dr. Radde met with it breeding in the mountains of the Island of Ochon. In the winter of 1857–58 numbers were observed on the islands of the Amoor and eastward to about 150 versts from the mouth of the Ussuri. In the summer they were rare in the Bureja mountains, and also near the mouth of the Dseja. Von Middendorff observed them rarely on the Jenesei in 67° N. lat., and in 69° lost sight of them. In the Stanowoi mountains they were numerous from Jakutsk to the Little Aîm, but from that river to Udskoi-Ostrog not a single one was seen; and he was told that the black game did not come from the Aldán. Nor did he find them on the shores of the sea of Ochotsk, or on the boundary mountains of the Stanowoi, but he heard that they were found on the Jorach, in Mantchuria. He himself saw a few on the Narâ, in Mantchuria, and was assured that to the south of that they were common in the morasses, but not met with on the southern slope of the boundary mountains. Dr. von Schrenck, confirming the above statements, says that he never saw it on the Lower Amoor, or the island of Saghalien; but west of the Bureja mountains the Bizar natives described a Grouse to him which could be no other than the present species. Mr. Swinhoe records it from China, without giving further particulars, and on the authority of Père David as occurring in Northern China.

The Black Grouse is an inhabitant of the heath-covered moors and woods, frequenting more especially (as may be inferred from its German appellation *Birkhahn*, or "Birchcock") the birch growth. With us in Scotland it frequents the moors; but in Scandinavia I have more usually met with it on the outskirts of the mixed conifer and non-evergreen forests and in the bush-covered swamps. It is, comparatively speaking, a shy bird, more especially so in localities where it is exposed to persecution during the shooting-season. In Norway, Mr. Collett informs me, "it prefers tracts where conifer growth is interspersed with non-evergreen trees and traversed by brooks; but it avoids the most desolate parts of the pine-woods, which latter the Capercaillie affects. They usually pass the day on the ground; and only in winter, when the snow covers the ground, do they feed in the trees.

"They run with great swiftness; and every sportsman will have experienced the difficulty of catching a winged Black Grouse.

"In winter they feed almost exclusively upon soft willow twigs and birch catkins (here called *Haurakler*). At this season of the year they collect in flocks, and make excursions to the neighbouring birch-woods. The whole flock often settle down upon a single tree, and are so occupied with picking catkins, that with ordinary precaution one can easily approach them. And there can be no prettier sight than a flock of black game sitting on one of the richest catkin-bearing trees on a clear frosty day. With easy and graceful motions they pick off the catkins, while the tender boughs bend under the weight of their heavy bodies, and all over the tree the glistening icicles hang down reflecting the sunshine like a thousand diamonds.

"It is characteristic of the black game that, during the heavy snow-storms in winter or severe cold, they seek shelter from the weather by suffering themselves to be snowed up, or by burying themselves in the snow drifts. In this manner they often penetrate several yards down in the snow, or make long galleries under it; and they only leave their place of refuge when compelled by hunger to do so, or when the storm is over." I may add that I confirm from personal observation what Mr. Collett writes respecting this bird suffering itself to be snowed up, and have seen the Ruffed Grouse of North America (*Bonasia umbellus*) do the same.

The Black Grouse is polygamous,—the males meeting at a regular place of assembly during the pairing-season, where they are joined by the females, who, it appears, seek the males at that season of the year—the pairing-time being usually in the month of April, but varying somewhat according to the season. One of the most peculiar scenes I have ever witnessed was what the Swedes call an "orrlek," an assemblage of black game during the pairing-season, when the males fight for the possession of the females. I have, when in Finland and Sweden, been on several occasions a witness of these scenes. The locality selected for the "lek" is usually some partially cleared spot in the forest, or a morass surrounded by forest trees; and the performance commences before day-break. One of the best "leks" I ever saw was one I visited not far from the town of Wyburg. A young Russian, a clerk to my host, told me he knew where this "lek"-place was, and proposed that we should visit it. A full hour before dawn we were up and *en route*; and before the first signs of dawn showed themselves I was ensconced in a small hut of boughs in the middle of a forest-clearing, and my companion in another at some distance. Before long a few black game appeared in the high trees skirting the clearing; and after a short interval a fine old cock alighted close to my hut, and immediately began to "spela" or drum. Strutting proudly about, dragging his wings, spreading his tail like a fan, and with outstretched neck uttering most peculiar and extraordinary sounds, he somewhat resembled an immature Turkey-cock. The notes uttered by the drumming cock are by the Swedes called "kuttrande" or cooing, and "blåsande" or blowing—the one being a peculiar sort of cooing or gobbling, and the other a sort of sharp blowing sound, which Mr. Collett, in a letter to me describing the notes of this bird, very aptly describes as a long-drawn *houijsch*. Every now and then the bird jumped up in the air; and during the "lek" I saw several times one of the birds turn an irregular sommersault. The male above referred to had not been long on the ground before another and another Black-cock came down from the neighbouring trees, until about a dozen were assembled, all strutting, drumming, and cutting the same peculiar capers. The first two which met, immediately

attacked each other; and a tough battle ensued, the two birds squaring up to each other like thoroughbred fighting-cocks. I was in hopes of seeing a battle royal, such as I believe not uncommonly occurs; but neither on this nor any other occasion did I see more than three engaged together; and these certainly carried on a sort of triangular duel with great zest, and went at each other fighting with beak and claws, making the feathers fly pretty fast. During the time the males were thus employed, the females, which did not at first show themselves, ere long appeared amongst the bushes close to the scene of combat, and appeared to evince their anxiety to welcome the victor to their embraces; for as the "lek" proceeded they came closer to the combatants, evidently eager to do their part of the performance. Mr. Collett, who has in Norway witnessed more "leks" than I have in other parts of Scandinavia, informs me that the oldest and strongest cocks are the first to open the ball; and from the tough combats that ensue I can well believe this. The call-note is clear and loud, and may be heard at a long distance in the clear atmosphere of a northern spring morning; it is, Mr. Collett says, much "louder than that of the Capercaillie, which is comparatively weak and cannot be heard unless one is close to where the bird is calling. During the time the old birds are fighting and blowing, the young males keep at a respectful distance on the outskirts of the drumming-place, imitating their seniors as well as they can. During the time he is drumming, the Blackcock is not, like the Capercaillie, deaf and blind to what passes around it, but, on the contrary, he has his wits well about him, and only forgets himself during the most fierce combats. The "lek" is often repeated in October and November, when the weather is clear; and some individuals may be heard at almost every season of the year: I have repeatedly heard them on the heights near Christiania in the late autumn when the weather was mild or rainy. The female visits the "lek"- or "drumming"-place every morning to receive the embraces of the male, the pairing-season extending over about eight to fourteen days; and she then deposits her eggs, which are usually eight or nine in number. They select for the purpose of nidification some quiet spot under a bush, or in the heather, though sometimes the nest is in quite an open place; still the colour of the female harmonizes so well with the ground that, when sitting, she is not easily distinguished; and she sits so close that she will only leave her eggs when almost trodden on. When the young are hatched they follow the mother, and are fed almost exclusively on ants' eggs, and various sorts of insects; when a little older they pluck off the leaves of various plants, tender grass-shoots, unripe seed-pods, and berries; and when in the autumn they are almost full-grown they, like their parents, feed almost exclusively on vegetable matter, and their crops are often found distended with various sorts of berries, such as *Empetrum nigrum*, *Juniperus*, *Myrtillus nigra*, and *M. uliginosa*; nor do they reject unripe berries, as the crop is often quite full of these unripe berries, though ripe ones are to be met with in abundance. When the young are in the down plumage, they pass the night on the ground under the sheltering wing of their mother; and she also covers and protects them when the weather is bad. So soon as the young can fly they flutter up and roost in the low branches of the trees. Both old and young birds are very fond of dusting themselves in sandy or black mouldy earth. The old birds feed on vegetable matter, tender shoots, and leaves of various wild plants, and berries of various descriptions. Mr. R. Gray writes that a curious fact is mentioned by Dr. John Walker, at one time Professor of Natural History in the University of Edinburgh, in his work entitled 'An Economical History of the Hebrides,' &c. In vol. i. p. 337, the following

note occurs:—"The stomach of the *Tetrao tetrix*, Linn., or Blackcock, after the bird had lived in woods during winter, was several times found stuffed with the foliage of the *Polypodium vulgare*, Linn., or common polypody. This is the only certain instance that has occurred of any animal living upon a plant of the fern kind in this country."

The nest of this species is a mere depression in the soil, scratched by the hen, sometimes without any lining whatever, but at others scantily lined with dried grass or leaves. The eggs are yellowish grey or yellowish white, blotched and spotted with yellowish red and rusty red, in size varying from $2\frac{1}{40}$ by $1\frac{17}{40}$ to $1\frac{37}{40}$ by $1\frac{15}{40}$ inch. In the series I have in my collection I do not find any great variety, some only being darker and more thickly spotted than others; and one egg which I obtained in Finland is pure white, unspotted.

Like all polygamous birds, the black game interbreed with other allied species; and some peculiar hybrids are produced. Those best known are the so-called "Rackel-foglar," being a cross between the Blackcock and the Capercaillie hen, of which I treat in writing the history of *Tetrao urogallus*. Another cross, that between the present species and the Willow-Grouse, is much rarer, but has been met with on many occasions, as will be seen by the following notes from Mr. Collett. The finest I ever saw of these so-called "Rip-orrar" was one in the St. Petersburg Museum; but I also saw a very fine specimen which was brought to Leadenhall Market two winters ago, and which somewhat resembled the one figured by Mr. Lloyd in his 'Game Birds and Wild Fowl of Sweden.' Mr. Lloyd writes that "it is even on record that the Blackcock has occasionally formed still stranger alliances. We are told, for instance, that Mr. Skogberg, having purchased one of these birds from a Finn, confined it in a roomy coop, and that some days afterwards he introduced to it a common speckled hen in the hopes of obtaining a breed between them. At first the Blackcock evinced great displeasure; for he not only gave the stranger a most ungracious reception, but actually maltreated her. By degrees, however, his dislike diminished; and at length he received in good part his allotted partner, and pairing took place between them. When she had laid ten eggs, and shown an inclination to 'sit,' the Blackcock was removed from the coop, and she was placed on the eggs; and in due time seven chicks were produced. At first these had a difficulty to walk; and their legs were therefore bathed with brandy; but afterwards they throve well and grew rapidly. When full-feathered, they most resembled the mother in colour, all being speckled; their tails were also of the same shape as hers; but their feet and legs most resembled those of the father. The heads of all were provided with a broad comb. They were females, and proved good 'laying hens.'"

Mr. R. Collett has just sent to me a little pamphlet written by himself, from which I extract the following interesting details respecting the so-called Riporre:—"The bird here called 'Rypeorre' (a name originally adopted from the Swedish) has been known to naturalists, so far back as the close of the last century, as a hybrid, bred between *Tetrao tetrix* and *Lagopus albus*. Here, too, it is the Blackcock which, pairing with the female Ptarmigan (*Tetrao tetrix* ♂, and *Lagopus albus* ♀), is the reputed father of so singular a progeny.

"Nilsson and most other ornithologists named this form *Tetrao lagopoides* (or *lagopides*); and Sundevall ('Svenska Foglarne,' p. 255), reasoning from the analogous facts recorded of the foregoing hydrid (*vide* p. 236), *Tetrao lagopodi-tetricides*.

"In tracing the origin of this hybrid, which has almost hitherto invariably occurred in but

one dress and one sex, it is necessary first to investigate whether there are not two distinct forms of 'Rypeorre'—the one bred between *Tetrao tetrix* (♂) and *Lagopus albus* (♀), the other between *Lagopus albus* (♂) and *Tetrao tetrix* (♀).

"A similar hypothesis, as previously mentioned, has been started to account for the parentage of the Rakkelhane; but the argument proving its fallacy with that form of hybrid, holds equally good as regards the 'Rypeorre.' Now it is an established fact that all individuals of the Rypeorre-hybrid, if procured at any given season of the year, are singularly alike both in size and coloration of plumage; and hence their origin surely cannot be traced to *more than one* of the two possible connexions.

"As previously stated, the exertions of Swedish sportsmen and naturalists have provided ample proof of the true parentage of the Rakkelhane. On one occasion eggs taken from a sitting *Tetrao urogallus* (♀) were incubated by a Domestic Hen, the issue being a brood of Rakkelhanes. Such a fact, taken in connexion with the similarity of appearance presented by all individuals of the Rakkelhane-hybrid, renders further evidence superfluous.

"So direct a proof of the Rypeorre has not yet been obtained; and it must therefore be inferred from less conclusive facts.

"Nilsson having suggested (in his 'Ornithologia Suecica,' vol. i. p. 303) the probability of the Rypeorre-hybrid being bred '*a T. tetrice patre et Tetr. subalpino femina*,' the conjecture has from that time to this remained unchallenged. By reason of his fine plumage, elegant form, and excess of vitality, *Tetrao tetrix* (♂) has been able to form these alien connexions. No other evidence, I believe, has been advanced in proof of the assertion but the fact that female Ptarmigan are said sometimes to make their appearance at the 'Aarfuglelege' (pairing-haunts of black game).

"On closer inspection, this theory of parentage does not appear to be in strict accordance with fact. Nay, the origin of the 'Rypeorre' can, I maintain, with far greater probability be explained as the result of *Lagopus albus* (♂) pairing with *Tetrao tetrix* (♀).

"This view has, indeed, been formerly entertained in a few instances, but found little favour with naturalists. The following are the chief arguments that have led me to adopt it.

"It is well known that the Rakkelhane (♂) greatly exceeds its male parent in size, whereas, in that respect, it exhibits a perfect resemblance to its mother. Now, reasoning from analogy, the size of the male Rypeorre should correspond exactly with that of its supposed mother (*Tetrao tetrix* ♀), and exceed that of its supposed father (*Lagopus albus* ♂) in due proportion. And this, indeed, is found to be the case. That the female *Lagopus albus* should generate the large-sized, strong-limbed Rypeorre is every whit as improbable as that *Tetrao tetrix* (♀) can be the mother of the Rakkelhane. The coloration, too, of the parent birds favours, I think, the assumption. That the *Tetrao urogallus* (♀) should pair with the Blackcock, which, though smaller in size, resembles even closely her proper male in plumage, is not surprising; but that the female Ptarmigan should pair with the Blackcock, a bird so different in appearance from her true mate, is not so easy to explain.

"On the other hand, it is far from improbable that a young Greyhen which has never paired should yield in a moment of surprise to the amatory advances of a male Ptarmigan in his dark-coloured summer dress.

"It has long been known that Ptarmigan will repair to the breeding-haunts of black game;

but, whenever there has been a question of sex, these unbidden visitors have been regarded as females.

"Now, whether *female* Ptarmigan actually consort with black game in their breeding-haunts is a point which has not yet been satisfactorily settled; indeed I am inclined to think there is little probability of such being the case. On the other hand, it has been *proved incontestibly* that *male* Ptarmigan *do*. One out of the small number of Ptarmigan killed from time to time on the heights round Christiania (a locality in which this bird very rarely breeds) was a male individual, which had boldly intruded into a 'Legeplads' of black game, where he was seen to deport himself in a manner precisely similar to that of the legitimate lords. The sex of this specimen was examined by Professor Rasch. These visits of the Ptarmigan to the breeding-haunts of black game are much more frequent than is generally supposed. It has been stated by experienced sportsmen that in Nordland and some parts of Nordre Trondhjem's Amt, localities where the vertical range of each of the two species may be said to coalesce, a *few male Ptarmigan are to be found at almost every breeding-haunt of black game.*

"The cause of this abnormal passion in the male Ptarmigan is not easily traced. True, the males of *Lagopus albus* are supposed to exceed females in number, in which case a supernumerary individual of the former sex, which had sought in vain for a mate among his own species, would not hesitate to pair with a Greyhen he might chance to fall in with. But connexions of this kind are repugnant to nature; and in many cases the only feasible explanation is to be found in a violent, irresistible desire to breed *out* of the species. As regards the Rakkelhane, it is not stated that paucity of females is the cause which induces the Blackcock to mate with the hen of the Capercaillie. Again, the male Ptarmigan scarcely yields to the Blackcock in the violence of its sexual instincts, which is shown by a remarkable fact, of which my friend Professor Friis was an eye-witness. In the spring of 1857, he observed on one of the most elevated farms in Nordmœre, Bergens Stift, a male Ptarmigan which haunted the homestead for several days in succession in amatory companionship with a white speckled domestic hen. The result of this singular connexion is unknown. As the Rakkelhane resembles its progenitor (*Tetrao tetrix*) in coloration of plumage, so also does the male Rypeorre. This similarity between the Rypeorre and its male parent is in many respects very striking; and though considerable numbers of the Rypeorre are no doubt annually produced, they are seldom recognized as such, being sold as fine examples of Ptarmigan in the spring or autumn plumage.

"Finally, it is worth recording, that two young males, shot in the month of October 1845, at Hedemora, in Sweden, were accompanied by a female bird, apparently their mother, which was supposed to be a Greyhen.

"For the theory of parentage here advanced there is indeed no positive proof; but there can be little doubt that some intelligent sportsmen will ere long witness the male Ptarmigan and Greyhen *in copulâ*, if indeed still more conclusive evidence be not obtained.

"Should our views on this subject prove correct, the names of the Rypeorre-hybrid (*Tetrao lagopoides* and *Tetrao lagopodi-tetricides*) can no longer be retained. If, indeed, it is necessary to bestow a special designation on this median form, the generic name should undoubtedly be derived from that of the *male* parent, the specific name being a compound of the mother's subordinated to that of the father. The name would then be *Lagopus tetrici-albus*; and this mode of

designation could be easily applied to hybrids which, though yet unknown, may possibly, nay probably *do* exist.

"The hybrid origin of this bird was unquestionably first pointed out in the year 1795 by Amtmand Sommerfelt, who, in the 'Topographisk Journal f. Norge,' part 14, p. 50, gives an excellent description of two specimens from the districts bordering on the Mjœsen (Eidsvold, Biri). These individuals, which were clearly male birds in winter dress, are recorded as a 'Blanding af Aarfugl og Rype' (hybrid between black game and Ptarmigan). This, too, is the first time the bird is found mentioned by a native author.

"In 1823, an individual was described by Pastor Sommerfelt (afterwards rector of the parish of Saltdalen) in the 'Mag. f. Naturv.' 1st series, vol. ii. This individual, also procured from a district bordering on the Mjœsen (Toten), was a male in summer plumage.

"The first individual preserved in any Norwegian collection was a male in winter dress; it was sent to Professor Esmark from Rœraas, in 1837. In the course of the next thirty years not more than half a dozen individuals are known to have been observed; they were all males procured from the south of the country (Christiansand Stift, Bergen Stift, Hamar Stift).

"From 1870–73 the University Museum has been so fortunate as to obtain six new specimens, but all male birds. One of them was a young individual in autumn plumage, the rest being in the normal winter garb. Five were procured from the south-eastern tracts of the interior (Gudbrandsdalen, Österdalen); the remaining bird was shot in Saltdalen (65° nearly), north of the Polar Circle, the most northerly point at which it is known to have occurred (the skeleton only of this individual is preserved).

"No female of this hybrid has hitherto, I believe, been met with in Norway.

"Of the habits of the Rypeorre scarcely any thing is known from Norway. Of six individuals which I have had an opportunity of examining the last few years in the flesh, five had evidently been caught in snares set for Ptarmigan. Now, most of such snares being set on the fell-sides in the birch-belt (on the southern fells, from 2500 to 3400 feet above the level of the sea), it would seem to be a resident at the same altitude as its male parent (*Lagopus*). The sixth individual was transmitted from Saltdalen, in Nordland, by Mr. Berbom, who had killed it in winter amongst Ptarmigan. Here the locality was a mountain-ridge, covered with a growth of birch, and distinguished by round rocky elevations, small mosses, and tarns. In this spot there is always a good supply of Ptarmigan and black game, whose respective ranges in northern latitudes sometimes coalesce; and apparently there was no lack of pairing birds for either of the two species.

"The crop and stomach of an individual shot in Gudbrandsdalen, December 7th, 1870, contained a number of fragments of a *Salix* (some of them 15 millimetres in length), fragments and numerous berries of *Myrtillus nigra*, tops of *Calluna vulgaris* (about 30 millimetres in length), and a few leaves of *Arctostaphylos alpina*. That of another individual (December 6th, 1872) was filled with the tops and seeds of *Carex stellulata*, amongst which were found a few berries of *Oxycoccos palustris* and *Juniperus communis*, some of the latter being unripe. In the specimen last procured (February 28th, 1873) I found leaves of *Vaccinium vitis idœa*, the fragments and buds of a willow, and of *Myrtillus nigra*.

"Of these several descriptions of food, *Arctostaphylos alpina* indicates a habitat of considerable

altitude, and some of the others that this bird, in winter time at least, frequents humid localities."

The black game are shot and snared in various ways. First amongst these modes I may name that of shooting them on the pairing-ground, a most cruel and unsportsmanlike proceeding, which I cannot too strongly condemn, and may add that, though I have visited these "lek"-places on several occasions, I have never killed a bird on any of them. The sportsman (!), hidden in a small hut of boughs, waits until he can get a pot shot into the combatants, and fires; and by letting the killed or wounded birds remain on the ground, several shots may be obtained on the same morning; but should the fowler emerge from his place of concealment all the birds take wing and leave the scene of action. In many parts of Scandinavia very good black-game shooting may be had with a well-trained pointer; but the usual mode in vogue there is to make use of a "Fogel-hund," or dog trained to tree the bird and bark until his master comes and shoots it down from its perch. Great numbers are also shot by making use of a stuffed decoy-bird called a "Bulvan," which is placed on a pole and stuck in a birch tree, the fowler being hidden within easy range. The birds are driven by beaters, and when they alight on the tree where the decoy-bird bird is, or one near it, are shot down. Of the various poaching modes of snaring black game I will not treat here, but refer any of my readers who wish for information on that subject to the work by Mr. Lloyd, which I quote above.

The specimens figured are, on the left side of the Plate an adult male and female, and on the right side a very old sterile female, all three being in my collection. The birds described are also in my own collection, excepting the young bird in down, which was lent to me by Baron A. von Hügel.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Aboyne, Aberdeenshire (*J. Walters*). *c*, ♂. Wermland, Sweden, February 22nd, 1872. *d*, ♂ *juv.* Christiania, October 1871 (*R. Collett*). *e*, ♂ *juv.* Christiania, December 1871 (*Collett*). *f*, ♂, *g*, ♀, *h*, *i*, ♀ *steril.* St. Petersburg market.

*E Mus. A. von Hügel.*

*a*, *pullus.* Wermland, Sweden, July 1872.

*E Mus. J. H. Gurney, jun.*

*a*, ♂. Leadenhall Market, September 1870. *b*, ♀. Leadenhall Market, October 1870. *c*, ♂ *juv.* Durham, August 28th, 1869.



GEORGIAN BLACKGROUSE.
TETRAO MLOKOSIEWICZI

# TETRAO MLOKOSIEWICZI.

(GEORGIAN BLACK GROUSE.)

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*Tetrao mlokosiewiczi*, Taczanowski, Proc. Zool. Soc. 1875, p. 267.

*Figura nulla.*

♂ *ad.* ex toto nigerrimus vix viridi cæruleo nitens, subcaudalibus concoloribus: subalaribus posticis et axillaribus niveis: caudâ elongatâ, incurvatâ, rectricibus externis quam centrales longioribus: cristâ simili ei *Tetraonis tetricis*: remigibus et tarsorum plumis nigro-fuscis.

♀ *ad.* mari dissimilis, griseo brunneoque subtiliter undulata: abdomine medio atro: caudâ elongatâ, rectricibus centralibus vix brevioribus.

*Adult Male.* Entire plumage glossy black, with deep bottle-green reflections, even the under tail-coverts similarly coloured to the rest of the plumage; hinder under wing-coverts and axillaries pure white; tail much elongated, at the tip bent downwards and slightly outwards, all the feathers on the terminal portion trough-shaped, the outer rectrices about two inches longer than the centre ones; inner portion of the under wing-coverts pure white; space over the eye covered with a red warty comb, as in *Tetrao tetrix*; quills and feathers on the tarsus rather browner than the rest of the plumage. Total length about 20 inches, culmen 1·05, wing 7·9, tail 9·0, tarsus 2·25.

*Adult Female.* Differs considerably from the female of *T. tetrix* in coloration; general coloration greyish, closely vermiculated with blackish brown and rusty brown, the upper parts being rather more rufous brown, and the under parts rather less rufous; throat whiter, the markings being wider apart; quills dark brown, the primaries marbled on the outer web with light brown, and the secondaries rather boldly marked with blackish and light reddish, and tipped with white; tail long, almost square, blackish brown, closely variegated with rufous and sandy yellow; underparts closely vermiculated with blackish brown on a greyish ground; centre of the abdomen marked with black; under tail-coverts reddish, broadly barred with blackish, and tipped with white. Culmen 1·05, wing 7·8, tail 6·5, tarsus 2·25.

It is somewhat remarkable that a new and very distinct species of Grouse should exist within the limits of the Western Palæarctic Region, and should only quite lately have been discovered. Such is, however, the case; for the first specimens were sent to Warsaw by Mr. Mlokosiewicz in 1875, to Mr. Taczanowski, who sent a description to the Zoological Society of London. Subsequently, on my applying to him, Mr. Taczanowski kindly intrusted the types to me to be figured in the present work, and forwarded to me the next specimens received by him from Mr. Mlokosiewicz.

As may be surmised from the fact that it has remained so long undiscovered, the present species has a very restricted range, being as yet only known to inhabit the Caucasus; and all the information I can obtain respecting it is embodied in the following notes received from the discoverer of the species, Mr. Mlokosiewicz, through Mr. Taczanowski:—

"I found this Grouse generally distributed throughout the principal chain of the Caucasus,

from Kadora (Kachétie, opposite the village of Sabuji, fifteen versts from Kwarel) to Zakataly, a distance of about a hundred versts. I observed it in the mountains of Kapuczynsk, the principal place in which is Bezyt, and near Balakna, one of the Bogosk mountains; and I fully believe that it occurs throughout the entire chain of mountains. It occurs in the mountains of Armenia to near Achalcyk, near the frontiers of Turkey, at Delizana, the highest place on the route from Tiflis to Erivan, and on Mount Ararat, which makes it probable that it occurs also in Kurdistan. In general it is found in hilly localities covered with herbage.

"I saw a specimen in the Museum at Tiflis, but do not know whence it came, as it is labelled merely '*Tetrao tetrix*, L.' It is difficult to define the altitudes of the different localities frequented by this species, as they vary according to circumstances. For instance, at Lagodechi, on the further end of the mountain, behind which begins the arable region, it is found at 8700 metres, whereas at Manglis the height attained is 6320 metres, &c. The localities in the neighbourhood of Lagodechi, as well as in the lowlands in the district of Kapucrinske, are very varied in their characteristics—cold and damp, owing to fogs and incessant rains; marshes, however, there are none. On the lower border of this region the hill is sprinkled with the following trees:—*Fagus sylvatica*; *Acer*, sp.; *Sorbus*, sp.; *Rosa canina*; *Rubus idæus*; *Fragaria vesca*; *Vaccinium myrtillus*; and a species of creeping juniper which is found at a great height.

"This Grouse is nowhere numerous, as the region it inhabits is narrow, and it never descends down the mountains. About twenty years ago it was much more numerous than it now is, being as it were protected owing to the war, as was also *Tetraogallus*; for the herdsmen were afraid to enter the country with their cattle. Now the entire district is full of flocks and herds, especially in the spring, when grass is still more scanty in the more elevated regions. The birds are therefore continually disturbed, and their eggs are taken and eaten by the shepherds. I have generally, I may add, found the males more numerous than the females.

"I know but little of the habits of the present species. I have shot them late in May and early in June, when the males were busy with their courtship and were drumming; but we were never fortunate enough to witness them when engaged in the combats for the possession of the females so characteristic of the Black Grouse, nor did we hear their pairing-call. It is partial to the grass land; and I have also met with it at an altitude of at least 11,000 feet amongst the snow; but I may remark that I never saw any but solitary males there. I have often seen a male standing motionless amongst the grass, or on a stone, for hours together, whilst some six or seven others were scattered concealed amongst the surrounding scrub; and though I have racked my brain to think what could possibly be the use of this strange proceeding, I never could properly understand it. It is not improbable that this solitary bird may be placed there as a sentinel: but if so he always failed in his duty; for he was always the first one shot, and my companions killed most of the specimens they procured when in this position. Possibly the bird has not yet learnt to regard man as its natural foe; or perhaps it takes up its position thus to more easily watch the movements of the females. Be it as it may, there must be some valid reason for the bird sitting so long in this stationary position. The flight of the male is audible at some distance, the sound resembling an agreeable whistling. With the aid of my dog I found one nest. It was situated at the foot of a rock, which afforded shelter from the rain; the hollow was slight, and lined with dry grass. This nest contained ten eggs.

"I made a post-mortem examination of a male in the spring; the crop contained *Triticum repens*, a great many blossoms of the ranunculus, and some twenty hymenopterous insects, all of one species. The crop of a male which I killed in the autumn was empty, whilst that of a female contained five blossoms of *Taraxacum*, a little grass, and some leaves of different sorts. With the exception of the shepherds, no one in the country is acquainted with these birds; and the native hunter does not care to expend his powder on such insignificant game, preferring to save it for deer and ibex, which abound and afford both flesh and leather, and also to destroy the wolves and bears. This bird is in their eyes of no more value than a sparrow; and their astonishment was great indeed at seeing us so earnestly occupied in the pursuit of such game. Notwithstanding this, the bird is known by different names in different districts. The Lerzgines call it *Ryezta*, the Touhines *Roczo*, the Tartars *Kara-touch* (blackfowl) or *Mesza-touch* (woodfowl).

"Shooting these birds with either pointer or setter is next to impossible in the mountains, where the walking is excessively heavy, and where you cannot always follow the dog, let alone the difficulty of shooting flying whilst standing in an awkward and not unfrequently a dangerous position. It also often happens that one cannot get within shot of a tree upon which one finds the Grouse 'treed' and quietly watching the dog as he keeps barking at him. When the bird is thus hunted and 'treed' by a dog, it always allows the gunner to come within easy range, so as to ensure his killing it. The bird is so little afraid of man that my companion, after shooting the male out of a tree, has also secured the female with which he was in company, she having only flown a few paces further on and perched again, allowing him time to reload whilst she sat there, and he then shot her down. This sport (!) is best in the spring, without a dog; for one can see the birds at a great distance amongst the herbage, which is neither high nor dense at that season, whereas in the autumn shooting the present species is much more difficult, as it is by no means easy to find the birds amongst the high grass-tufts, which are, moreover, very slippery."

I am indebted to Count Casimir Branicki for an egg of the present species, and have seen three others sent by him to this country. They all resemble the eggs of the common Black Grouse in general character, but have a much lighter, indeed almost ochreous white, ground-colour, and are less boldly marked, the markings being also paler. In size they do not differ from the average run of black-game eggs.

The specimens figured and described are the types of the species, and are now in the Museum at Warsaw.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Lagodechi, Russian Georgia (*Mlokosiewicz*).

*E Mus. Wars.*

*a*. ♂ *ad.*, *b*, ♀. Lagodechi (*M.*).



HYBRID
between T. TETRIX & T. UROGALLUS

CAPERCAILLIE.
Barren Hen



**CAPERCAILLIE.**
TETRAO UROGALLUS.

# TETRAO UROGALLUS.

(CAPERCAILLIE.)

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*Tetrao urogallus*, Linn. Syst. Nat. i. p. 274 (1766).
*Le Tetras*, Buff. Hist. Nat. Ois. ii. p. 239 (1772).
*Tetrao major*, C. L. Brehm, Naturg. Deutschl. p. 503, "Germany" (1831).
*Tetrao maculatus*, id. tom. cit. p. 504, "Renthendorf" (1831).
*Tetrao crassirostris*, id. tom. cit. p. 504, "Kärnthen" (1831).
*Tetrao maculatus*, id. Vogelfang, p. 260, "Scandinavia" (1855).
*Tetrao urogallus crassirostris* (Br.), Olph-Galliard, Cab. Journ. 1860, p. 391, "Switzerland."
*Urogallus maculatus* (Br.), id. tom. cit. p. 392, "Switzerland."

*Coq de bruyère* et *Poule de bruyère*, French; *Auerhahn* and *-huhn*, German; *Tiur* (♂), *Röj* (♀), Norwegian; *Tjäder*, Swedish; *Glouhar* (♂), *Kopoluha* (♀), Russian; *Suer* (♂), *Bos-suer* (♀), Bashkir; *Chuckche* (♂), *Kon-dozmer* (♀), Ziranin (*Sabanäeff*).

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. pl. 73 (♂), 74 (♀); Werner, Atlas, *Gallinacés*, pl. 2; Fritsch, Vög. Eur. taf. xxvi. figs. 3, 4; Sundevall, Svensk. Fogl. pl. xxxii. fig. 2; Gould, Birds of Eur. pl. 248; Naumann, Vög. Deutschl. taf. 154, 155; Bettoni, Ucc. Lomb. tav. 108.

♂ *ad.* capite et collo saturatè griseis nigro vermiculatis: dorso, scapularibus et tectricibus alarum rufescenti-brunneis nigro vermiculatis: uropygio et supracaudalibus nigris grisescente albido vermiculatis, his albido apicatis: caudâ nigrâ, plumis nonnullis medialiter albido notatis: remigibus saturatè fulvis, in pogonio externo ferrugineo marmoratis, secundariis fulvidis, ad basin nigro et versùs apicem albido vermiculatis et albido apicatis: subtùs niger, mento purpurascente nitente: pectore conspicuè viridi nitente et imo vix griseo vermiculato: abdomine albido notato: tibiæ et tarsi plumis pallidè brunneis, illis albido terminatis: subcaudalibus nigris, albo notatis et apicatis: subalaribus nigricantibus, griseo vermiculatis et albido terminatis, nonnullis albidis: rostro albicante corneo: pedibus brunneis: iride brunneâ.

♀ *ad.* capite, collo et corpore suprà pallidè ferrugineis, nigro transfasciatis, plumis nonnullis albido apicatis: remigibus fulvis, in pogonio externo ferrugineo marmoratis: secundariis fulvidis, ferrugineo marmoratis et albido apicatis: tectricibus alarum dorso concoloribus et rufescente isabellino apicatis: caudâ et supracaudalibus ferrugineis, nigro transfasciatis et marmoratis et albido terminatis: subtùs pallidè ochrascenti-ferruginea: pectore vix nigro guttato: abdomine indistinctè nigro transfasciato, plumis albido apicatis: crisso et tarsi plumis albidis: subcaudalibus ochrascenti-ferrugineis, nigro notatis et albido apicatis: subalaribus albis, nigro notatis: rostro brunnescenti-corneo.

*Adult Male* (St.-Petersburg market). Head and neck dark slaty grey, each feather narrowly and irregularly barred with black; feathers on the chin black, glossed with purple, and much elongated; back, scapulars, and wing-coverts dark reddish brown, narrowly vermiculated with black; rump and upper tail-

coverts black, vermiculated with greyish white, the latter tipped with white; tail rounded, black, some of the feathers marked with white in the centre; quills dull brown, marbled with light sandy brown on the outer web; secondaries dull brown at the base, otherwise rufous brown, vermiculated with black, except at the tip, where they are vermiculated with white, and finally tipped with pure white; breast and underparts generally black, the breast richly glossed with green; lower part of the breast imperceptibly vermiculated with grey; abdomen marked with large white blotches; feathers about the vent and lower part of the abdomen loose and hairy, white towards the terminal portion, those on the thighs and tarsi brown, the former tipped with white; under tail-coverts black, marked and tipped with white; under wing-coverts blackish, vermiculated with grey, and tipped with white, some grey, tipped with white, others pure white; beak whitish horn; feet dull brown; iris brown. Total length 3 feet, culmen 2·5, wing 14·8, tail 11·0, tarsus 3·0.

*Adult Female* (St.-Petersburg market). Head, neck, and upper parts generally light ferruginous, barred with jet-black, many of the feathers having a white tip; quills dull brown, on the outer web marbled with pale rufous; secondaries tipped with white, the inner ones marbled closely on both webs with ferruginous; wing-coverts similar to the back, but tipped with pale reddish cream-colour; tail and upper tail-coverts bright reddish, almost fox-red, barred and marbled with black, and broadly tipped with white; chin, sides of the head, and breast pale rufous, spotted only here and there with black on the lower part of the neck; rest of the underparts pale rufous, here and there barred with black, and many of the feathers so broadly tipped with white as to give a whitish appearance; feathers round the vent and on the tarsi almost pure white; under tail-coverts pale rufous, tipped with white, and here and there marked with black; under wing-coverts white, marked with black; bill dull horn-brown, paler at the edges of the mandibles and the base of the lower mandible. In size much smaller than the male, measuring total length 26·0 inches, wing 12·0, tail 7·5, tarsus 2·5.

*Young in down* (Sweden). Upper parts dark sulphur-yellow, washed here and there with rufous, and marked with black, especially on the crown; wings dull brown, tipped with rufous cream, and crossed by two bars of that colour; underparts sulphur-yellow, on the breast washed with rufous.

*Barren Female assuming the male plumage* (Christiania, November 14th, 1871). Head and neck much greyer and paler than in the adult male, most of the feathers being as in the female plumage at the base, but tipped with grey as in that of the male; wings and rump as in the male plumage, but more rusty in colour; tail black, tipped with white, and irregularly marbled, especially towards the base, with rufous; feathers on the sides of the head, throat, and breast rufous at the base, barred with black, and broadly tipped with grey, those on the chin only very slightly marked with blackish; rest of the underparts rufous at the base, then black, and finally broadly terminated with whitish; feathers on the thighs and tarsi as in the male plumage.

*Obs.* The barren females differ a good deal, and are sometimes almost identical with the adult male in plumage, though easily distinguishable by their much smaller size. Mr. F. Bond possesses one in this plumage, which he purchased in Leadenhall market, where I also saw it in the flesh.

Of the hybrid between the Capercaillie and Blackcock, of which I treat further on, I have three specimens from Norrland, obtained through my friend Mr. Meves, and one from Röraas, in Norway, obtained by Mr. R. Collett on the 16th December, 1871, all males. This last specimen I have figured on an extra Plate, with the barren female described above; and as a description may be useful, I give it as follows:—

Head and neck black, on the crown and upper part of the neck with dark bottle-green reflections, and on the lower part of the neck glossed with rich purple; back and rump black, here and there indistinctly vermiculated with grey; upper tail-coverts rather more vermiculated with grey and brown, and tipped

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with grey; wings as in the male Capercaillie, but the secondaries have the basal portion white, and the wing-coverts are much darker; tail forked, the outer feathers graduated and slightly inclined to curve outwards, in colour jet-black, except at the base, where it is white, and the central feathers are narrowly tipped with that colour; underparts black, on the throat and breast richly glossed with purple; feathers about the vent white at the tip, black at the base; under tail-coverts black, marked with pure white; under wing-coverts nearly pure white.

The female "Rackelfogel," or hybrid, is not unlike the Greyhen, and is not unfrequently mistaken for her. It may, however, always be distinguished by the form of the tail, which is square at the end, not rounded as in the female Capercaillie, or forked as in the Greyhen; and the under tail-coverts do not, as in the latter, reach to the end of the tail. Mr. Lloyd, in his 'Gamebirds and Wildfowl of Sweden,' gives woodcuts of the tails of the three females, clearly showing the distinguishing characters.

This magnificent Grouse, the largest of its family, is found throughout Northern Europe, extending to Central Europe, and is even met with in the forests on the mountain-ranges in the southern or southern-central portions of the Western Palæarctic region. Formerly it is said to have been common throughout Great Britain, but has in most parts been long extinct. Though some forty years ago it was almost extinct in Scotland, it is now, thanks to the exertions of Sir Thomas Fowell Buxton, firmly reestablished in that country; and Mr. Robert Gray writes that in the counties of "Perthshire and Forfarshire it breeds extensively, and has become so firmly established that proprietors of the forests in which it is found do not now object to its falling to the sportsman's gun. In some places, indeed, it has been thought prudent to thin the Capercaillies where they have become numerous. Mr. Geike, factor to the Earl of Airlie, lately informed me that he has seen as many as fifteen brace killed in a day by one shooting-party. These birds are also abundant on the estate of the Earl of Breadalbane, where of late years they have increased to a great extent. Stray birds are often seen in the counties adjacent to the two just mentioned. Numbers are sent to the Glasgow poulterers; but, from the rankness of their flesh, they are not much esteemed for the table—a quality which in these degenerate poaching-days must materially lessen the chances of their destruction."

Mr. Lloyd, the well-known sportsman and naturalist, who was instrumental in the reintroduction of the Capercaillie into Scotland, gives the particulars in the following words:—"In the autumn of 1836 the late Sir Thomas Fowell Buxton, then recently returned from Taymouth Castle, where he had been much struck with the great capabilities of the woods for the naturalization of the Capercaillie, took up the affair in good earnest, and, as with every thing else in which his energetic mind was engaged, with the determination of carrying it through if possible. 'Influenced by the desire, in which I am sure you will concur,' so he wrote to me, 'to introduce these noble birds into Scotland, coupled with that of making Lord Breadalbane some return for his recent kindness to me, I request you to procure for his lordship, at whatever cost, the requisite number.' He at the same time placed his head keeper at my disposal—no slight sacrifice for a Norfolk game-preserver. It was, indeed, an onerous commission, as prior to this time it had been a matter of difficulty to procure even a brace of living Capercali in Sweden; but by distributing placards throughout the country offering ample rewards, and by instructing the peasants how to knot their snares so as not to kill the birds, my object was at length gained, and within a few months of the receipt of the Baronet's letter, twenty-nine Capercali, followed

up shortly by twenty more, were on their way from Sweden to Taymouth Castle; and, with the exception of a single one killed by accident, all reached their destination in safety.

"The arrival of this magnificent collection in Scotland created quite a sensation; every one was delighted that matters had thus far gone well, and no one more so than Sir Fowell, who addressed to me a letter on the occasion, somewhat too complimentary for publication. Again, in September 1837, not very long after the arrival of the first batch of twenty-nine, he wrote me as follows:—'I have just returned from Taymouth, where I have been reminded of you very frequently by the Capercali. I saw eighteen of them in excellent health and plumage a few days ago; the other ten, six hens and four cocks, were turned out; and there is reason to hope they are doing well; so that, thanks to your energy in collecting them, Larry's care in bringing them over, and Lord Breadalbane's anxiety for their welfare, our experiment is likely, I trust, to succeed, and Scotland to be restocked with this noble bird. They are greatly admired by every one, and very deep interest is felt for them. . . . . Nothing can surpass the woods into which they are to be turned out, and the protection they will receive,' the writer goes on to say; 'and as Lord Breadalbane's territory is so large, I hope they will not be disposed to leave such excellent quarters.'

"Sir Fowell's anticipations as to the success of the experiment, owing to the good management of Lord Breadalbane, were fully realized, as will be seen by the accompanying note from his Lordship to myself, dated 11th October, 1841 (that is, some five years after the introduction of the birds into Scotland):—

"'I have great pleasure in informing you that the Capercali have thriven most excellently. The experiment of putting the eggs under the Greyhen was attended with perfect success, and there are now a goodly number of these birds hereabouts.'

"It is very satisfactory to add that the Capercali have subsequently flourished in the Highlands in an extraordinary manner. Less than four years ago, indeed, Lord Breadalbane himself told me he imagined there were then fully one thousand of the birds on the Taymouth property. His head keeper, moreover, in a letter to a friend, estimated them at double that number."

Scandinavia and Northern Russia are now the head quarters of the Capercaillie, and it is there common. In Norway, Mr. Collett writes, "it is chiefly met with in the wooded portions of the eastern provinces, or 'stifts,' where it breeds abundantly from Smaalehnene upwards to Alten (70°), where I found it myself not uncommon in the summer of 1872; in Finmark proper it has also been met with, but sparingly, as at Karasjok, where a male specimen was shot on the roof of the village church in January 1872. It ranges also as far north in South Varanger. Along the western coast it is found in less numbers. Thus its distribution coincides with the limits of the fir (*Pinus sylvestris*) in a horizontal and vertical direction.

"Every winter I have met with sterile female individuals, which to a greater or less extent had assumed the garb of the male. It is obvious that the reason of this sterility cannot always be old age, several of these females having been young birds; and in the latter a diseased state of the ovarium must be the true cause. The most remarkable example of this kind I found in the game-market of Christiania, October 18th, 1872. In dress, not in size (total length 655 millims.), it exhibited so striking a resemblance to an old and fully coloured male as to be with difficulty distinguished from one. As in all probability very few individuals are characterized by such a

dress, and as it is scarcely possible for any individual to approach closer to the male bird in appearance, the sterile females can probably always be distinguished from the males by the following peculiarities of plumage:—the beard-like feathers on the throat speckled with white, bill dark, tail finely speckled with greyish red (without the large white spots of the male Capercaillie)."

Sundevall gives its range in Sweden as extending as far north as the pine-woods grow; and Pastor Sommerfelt states that it breeds in South Varanger, and is occasionally met with in the autumn on the Tana. I met with it in Finland in almost every part of the country I visited, and frequently saw them when travelling through the northern portion and driving along the forest roads. In Russia, especially in the Government of Archangel it is very numerous, and vast numbers are sent to the St.-Petersburg market every season. Mr. Sabanäeff informs me that it is especially numerous in the Governments of Vladimir, Tver, and Smolensk, and the forests in the northern part of the Government of Perm.

In some parts of Germany it is still not uncommon; Borggreve states that "it is a resident in North Germany, and until quite lately was to be met with in all the large forests; it is still found in Silesia, the Thüringer Wald, and in Westphalia (Sauerland), rarer in the Harz, and tolerably common in the mountains of the Weser and the Westerwald. There have been none in the mountains on the left bank of the Rhine for the last fifteen years. On the plains a few still are to be met with in the Görlitzer Stadtwald and a few of the larger forests in Upper Silesia, Prussia, and Pomerania." Mr. A. von Homeyer states that in 1868 the official records of the foresters of the Görlitzer forest stated that seventy-six "drumming" cocks were counted there in the spring. According to Tobias it breeds near Carolath and Primkenau; and Pastor Pässler records it as breeding annually in the forests of the Ramberg (Anhalt). In Denmark it is now quite extinct. Sir John Lubbock, in his paper on the "Danish Kjökkenmöddings," published in the 'Nat. Hist. Review,' 1861, draws attention to the fact that the remains of the Capercailzie (*Tetrao urogallus*) are found in these rubbish-heaps of the ancient inhabitants of Denmark. Its absence from that country at the present day points to an interesting change in the flora and fauna of that part of Europe, the extensive pine-forests that must have afforded food and shelter to this bird having given place to the beech and other hard-wood growth.

In Holland and Belgium it seems to be almost extinct; but, according to Degland and Gerbe, it is still found in some of the wooded districts in the latter country, and also "occurs in the mountain-forests of the French Vosges and Pyrenees and the Jura; but it is doubtful if it still exists in the mountains of Auvergne." Delarbre records it as having been seen early in the present century in the Noriche and the Catelade, near Oliergues, in the forest of Menet, in Auvergne, and in those of Mont-Dore. Formerly it must have been met with in the south of France, as M. Alphonse Milne-Edwards, in his great work on the fossil birds of France, records remains of this species as having been found in the bone-caverns. Regarding its occurrence in Spain, Lord Lilford writes as follows:—"I have heard on unquestionable authority that it is by no means uncommon in certain suitable localities in the provinces of Leon, Asturias, and Galicia, and is known as 'Faisan' and 'Gallo de Bosque.' I could not find out that it was known on the Spanish side of the Pyrenees, in Aragon, during my visit to that district in 1867, though it undoubtedly exists on the French side."

It still inhabits Switzerland, in some parts of which country it is not uncommon. Mr. Olph Galliard records it as "tolerably common in the mountains near Boll (canton Friburg), especially on the Berra. It is, however, not a true Alpine species, is not found in the Breyerz valley, nor on the mountains near Zaun; but it descends, though rarely, on the plains near Boll." In Italy it is found only in the high mountains, being met with, according to Savi, in those of the Savoy and the Veronese Alps. It is found even in Greece, where, according to Lindermayer, it is "tolerably common, and breeds in the forests of Akarnania," and is still to be met with in many parts of Southern Germany. Dr. A. Fritsch records it as "common in the large forests of Bohemia, and found in the woods of Dobrichovic, near Prague;" and my friend the late Mr. Seidensacher informed me that it inhabits the Bacher Mountains in Styria.

Count Wodzicki states that it is tolerably common in the Hungarian and Galician Carpathians, as high as 4000 feet above the sea-level; and Messrs. Elwes and Buckley write that they "believe that this bird is found in the pine-forests of the Balkan Mountains," though they have "no positive evidence as to its existence there." Professor von Nordmann states that it does not inhabit the Caucasus, and is rare in Southern Russia, being only met with in the wooded portions of North-east Bessarabia.

To the eastward the Capercaillie extends far into Asia; but in the eastern portion of Siberia it appears to be very generally replaced by a smaller race, named by Professor von Middendorff *Tetrao urogalloides*. Professor Sundevall, who has gone carefully into the question as to whether this latter is a really distinct and valid species, inclines to the opinion that it may be a barren hen which has assumed the male plumage. I myself have not been able to examine a specimen of this smaller race or species, and am therefore unable to speak with any degree of authority on this question. Mr. Sabanäeff records *T. urogalloides*, Midd., as occurring in the Ural; but Mr. Meves points out to me that the bird he refers to is not that race, but the hybrid between the Blackcock and Capercaillie hen, and that the species found there is the Common European Capercaillie. Von Middendorff met with the present species at Krasnojarsk; and Dr. Radde observed it in the valley of the Irkut, whereas in the Apfel Mountains he only met with *T. urogalloides*, Midd. In the market of Irkutsk he only found *T. urogallus*. He met with it breeding near Lake Baikal, and on the 9th and 17th of July he observed scarcely fledged young. In the Eastern Sajan, at an altitude of 4000 feet, where the black game were entirely absent, this species was not rare.

The Capercaillie of Kamtchatka is said to be *T. urogalloides*, Midd.; and Mr. Swinhoe records a Capercaillie from China which may be that or the present species.

In its habits I have usually found the Capercaillie more a frequenter of the large forests than the black game are. I found it, however, common in the second-growth woods near Uleåborg, in the north of Finland, and saw them there during the pairing-season, when, lacking large trees, they used some of the smaller trees for their "lek;" and it was easy to distinguish those which had been used for that purpose, as the tops were bent down by the weight of the birds. I have seen but little of the breeding-habits of this species, and therefore cannot do better than transcribe the notes published by that most zealous sportsman Mr. Lloyd, as follows:—"The '*lek-tid*,' or pairing-season, with these birds usually commences towards the end of March or beginning of April, the time more or less depending on the mildness or severity of the

weather, the state of the snow, &c., and continues until the middle of May, or, it may be, the end of that month. The '*lek-ställe*,' or locality where affairs matrimonial are carried on, is commonly a wooded eminence near a morass, tarn, or other opening in the forest—sometimes, however, though not frequently, 'on a level rock with fir trees growing in and about it.' The '*lek-ställe*' is generally of some extent; and the Capercali resort to it year after year, unless the trees have been felled, or the forest otherwise disturbed.

"The oldest or strongest male (or males, as the case may be) is the first in the spring at the '*lek-ställe*;' and in the more northern forests, even when the snow is deep on the ground, he commences his *spel*, either on the surface of the snow, on which one often sees the marks of his trailing wings where he has paraded to and fro, or perched upon the upper branch of a pine. At such times his neck is stretched out, his wings droop, his feathers are ruffled up, and his tail spread out in the manner of a fan, as depicted in the illustration sketched by Mr. Wilhelm von Wright.

"The spel of the Capercali, which consists, so to say, of three notes, is of a rather singular nature. An attempt, though an imperfect one, has been made to imitate it by the following words, viz.:—First note, *Pellep! Pellep! Pellep!* Second note, *Klickop!* Third note, *Hede! Hede! Hede! Hede!* The first note, *Pellep*, called *knäppingen* (pl. *knäppingar*), is said to resemble the sound of two dry sticks struck together. The second, *Klickop*, named *klunken*, has been likened to a sort of gulp in the throat, the noise made when the tongue is smacked against the palate, or when a cork is drawn out of a bottle. The third, *Hede*, termed *sisningen*, has been compared to the sucking-in of the breath, as it were, or the sound caused by sharpening an edged tool on a whetstone. The giving utterance to these several notes may altogether occupy from two to three minutes; and, provided the bird be not in any way disturbed, he almost immediately afterwards commences repeating them, and continues to do so almost without ceasing.

"His spel is not loud, and, if there be wind stirring at the time, cannot be heard (at least by the inexperienced) at any considerable distance. In the most favourable weather, indeed, it is not audible at more than one hundred and fifty to two hundred paces.

"Between the *knäppingar*, the first note of his *spel*, there is usually at the commencement some little interval; but presently these follow so close on each other as to be all but continuous. Whilst the *knäppingar* last the bird is wide awake, and not unfrequently turns his head from side to side, as if to look out for the enemy; and this, to a certain extent, is also the case when he sounds his second note, *klunken*. But during his third and last note, *sisningen*, his head is thrown backwards, his neck moves to and fro, wave-fashion; his expanded tail stands at something like right angles to his body, and froth issues from his mouth. He is worked up into such an agony of passion, as to be all but unconscious of what is passing around him. Many, indeed, assert he is then both deaf and blind; and it is at this critical moment, as will be shortly shown, that so many of these noble birds fall to the gun.

"The exertion during the *spel* has an extraordinary physical effect upon the Capercali, as is evidenced by the frequency and abundance of his droppings; and during his last note, *sisningen*, when, as is said, he is worked up into a state of ecstasy, he trembles to such a degree that even the pine, however large, on which he is perched, sensibly vibrates to the touch!

"On hearing the *spel* of the cock, the hens assemble at the '*lek-ställe*' from all parts of the surrounding district, and alight either on the very tree where he is perched, or other trees in the immediate vicinity, when they make their presence known by their somewhat melancholy *läckton*, or call-note, resembling in a degree the words *Gock! Gock! Gock!* or rather, perhaps, the croak of the raven.

"A little before sunrise, the cock usually descends from his perch and alights on some open spot in the forest close by, where the hens (as seen in the accompanying drawing) collect about him; and here, during the intervals of his *spel*, which he still continues, and whilst parading amongst the ladies of his harem, he pairs with each in succession.

"Immense excitement is then exhibited, not only by the male but also the female. The latter may be seen, with outstretched neck and hurried movements, flitting round and round her lord, as if challenging his notice, till at length, approaching more boldly, she nestles close beside him and solicits attentions which his gallantry ultimately accords. Indeed, so absorbing is the love of the female Capercali during the pairing-season that hens, whose mates have been shot, have been found lying on the ground in a state of excitement, and at the same time giving utterance to the plaintive call-note by which they were wont to lure him to pairing; and so abstracted, moreover, as actually to allow themselves to be taken by the naked hand.

"Several cocks, old and young, not unfrequently congregate at the same '*lek-ställe*;' but so long as the old birds live, the young, or those of the preceding season, are not allowed to *spel*—and should they venture so to do, are pretty sure of getting what Brother Jonathan calls 'badly whipped.' But when the old birds are shot, the young ones, after the lapse of a day or two, commence; and occasionally several may be heard at their *spel* at the same time; and then, as M. Greiff says, 'it goes gloriously.'

"Early in the pairing-season, when the male for the most part is quite alone, he does not *spel* regularly or with much animation, merely giving expression to a few straggling notes; but when at an after-period the females make their appearance at the '*lek-ställe*' he 'opens his pipes,' as has been quaintly observed, 'in right good earnest.' 'When the Woodcock *rodes*, the frogs croak in the marshes, the Snipe drums in the air, and the dung-beetle buzzes about one's ears,' the Capercali is said to *spel* best. Commonly he holds his *spel* from daybreak to sunrise, and from a little after sunset until quite dark. The length of time greatly depends on the state of the weather and the season of the year. When the spring is far advanced, indeed, he not unfrequently continues his *spel* throughout the greater part of the night.

"During calm and misty weather, the *spel* of the Capercali is most animated. Even during a regular downfall of rain or sleet, unless accompanied by a high wind, he carries it on. Ekström mentions having on one occasion shot a Capercali at the '*lek-ställe*' whose sides were altogether white with wet snow, which had fastened amongst his feathers. If the weather be extremely cold, his *spel* is either dull or he ceases altogether, and, as surmised, for this reason, that the froth, which at such times exudes from his bill, becomes congealed, and prevents him from expressing his notes.

"The period when the Capercali discontinues his *spel* depends much on the season; for, if forward, he begins early and concludes early; but if, on the contrary, the spring be backward the reverse is the case. As a general rule 'sportsmen consider his *spel* ended when the leaves

of the mountain-ash are as large as the bird's own foot;' but in parts of the country the peasants entertain the notion that the cessation of his spel is dependent on other causes than the state of the weather. They say that 'every time he holds his *spel* he plucks away one of the horny scales growing about his toes, and that it is not until they are all gone that his *spel* terminates.'

"The Capercali occasionally strikes up a few notes about Michaelmas; but his *spel* at that time is not of long continuance. I myself never then heard him *spel*; but many a chasseur has assured me that they have shot him whilst in full play. The Jägmästare Lindberg tells us, indeed, that he himself has known more than twenty cocks to be thus shot in the autumn—the greater part of them in September, but some also in October. Why the Capercali should *spel* at this time of the year is matter of speculation with many in Sweden. M. Grieff suggests it may be for the purpose of showing the young birds the situation of the '*lek-ställe*.'

"During the pairing-season the Capercali is very pugnacious; and fierce combats are then common between the rival males. These always take place on the ground, and for the most part on some little eminence, free from brushwood or other obstruction. The birds when charging each other spring high in the air in the manner of game-cocks; and whilst striking with their wings, tear one another with their claws. Their bills are also brought into play; and he that succeeds in getting such fast hold of his opponent as to pin him to the ground, in which position he punishes him severely, usually comes off the victor. Whilst the fight lasts (and it is often of long continuance), the combatants not unfrequently snap their bills together with great force, the noise of which, together with that caused by the blows inflicted with their wings, may, in clear and calm weather, be heard at a very considerable distance.

"During these duels the birds are not unfrequently so blinded by rage as to be altogether forgetful of their own safety; and if due precaution be used they may be captured by the hand, of which more than one instance is on record.

"'Some years ago,' says Ekström, 'a servant of mine, in company with another man, left home one spring morning to cut wood in the forest. When arrived there they saw two Capercali cocks fighting desperately on a rising ground. Neither of the men having a gun or other weapon, my servant at once sprang forward and threw himself on the combatants; but his comrade being somewhat timid did not come to his aid, and he was only able to retain one of the birds, which he brought home to me.'

"When the pairing-season is over, or even previously, the females retire to their several breeding-grounds. These comprise not only the great pine-forests of the lowlands, but those clothing the lower slopes of the fjälls. We are told, indeed, by M. Barth, that 'on two occasions, during the autumn of 1862, he met with broods of Capercali in small patches of willow on the high fjälls themselves, and at a considerable distance above the last birch tree.'

"The female makes her nest (which is a mere hole scraped in the ground) under a tree or bush. The eggs, numbering from five or six to twelve or fifteen, according, as it is believed, to the age of the bird, are of a dirty yellow colour, marked with light-brown spots and blotches. In length they are $2\frac{1}{16}$ inches, and in thickness $1\frac{6}{8}$ inch.

"The period of incubation is said to be a month. The young, usually hatched about the beginning of June, keep with the mother until towards the approach of winter, or even longer; but the cock separates from her at a much earlier period."

In my collection I have a series of eggs of the Capercaillie, chiefly obtained by myself near Uleåborg, in Finland, which in size vary from $2\frac{4}{40}$ by $1\frac{21}{40}$ to $2\frac{13}{40}$ by $1\frac{26}{40}$ inch, and in colour from pale dull yellow, spotted and blotched with yellowish rufous spots of large and small size, distributed all over the surface of the egg, to rufous yellow, so closely spotted with pale yellowish red spots as almost to give the egg the appearance of being plain, unspotted, dark clay-colour.

When hatched, Mr. Collett informs me, the young birds are at first fed almost exclusively on small soft-bodied insects; but they soon learn to feed themselves, and pick up small seeds and other vegetable matter. He examined the stomach of a young male of about the size of a common fowl, which was shot near Christiania on the 22nd of June, 1868, and found it to contain tops of *Carex pilulifera* and *pallescens*, small bits of *Pteris aquilina*, nymphæ of different species of *Myrmica*, and a few Hymenoptera. In the winter season the stomachs of the old birds have generally been found to contain coarse gravel, leaves, and berries of *Vaccinium vitis-idæa*, and fir-foliage, the latter often in great quantities; and sometimes the stomach contains nothing but the soft buds of *Pinus* and *Abies*.

Like the black game and Ptarmigan, the Capercaillie has a tendency to hybridize; and it has been recorded to have paired with the common Turkey. The so-called "Rackelfogel" or "Rakkelhane" is the best-known of the hybrids, and is by no means uncommon. Respecting this bird Mr. R. Collett writes that "Nilsson having given such conclusive evidence of the hybrid origin of this bird (called in the vernacular 'Rakkelhane') that the question was regarded by naturalists as settled, he proposed *Tetrao urogalloides* (or *urogallides*) as an appropriate name for this form. At the same time he showed from his own observations, and those of intelligent sportsmen, that this hybrid is bred between the Blackcock and the female Capercaillie (*Tetrao tetrix* ♂ and *T. urogallus* ♀)—whether the connexion arises from the Blackcock repairing to the breeding-haunts of the Capercaillie, or rather (which perhaps is more frequently the case) from the female Capercaillie, prompted by a morbid tendency to *mésalliance* (so often the result of inordinate sexual desire), consorting with black game, and pairing with the handsome and gallant male of that species.

"True, this hybrid has been supposed by some to be the result of the male Capercaillie mating with the Greyhen (*Tetrao urogallus* ♂ + *tetrix* ♀); but the supposition has invariably been scouted as improbable, and, indeed, no such form of hybrid has been hitherto observed.

"Nilsson's designation (*Tetrao urogalloides*) has been accepted by all Scandinavian naturalists, and indeed by most others that do not hold the belief that this hybrid forms a distinct species. The name, however, is not strictly applicable, partly because the 'Rakkelhane' is a compound, and not a simple species, and should therefore, as such, have a compound and not a simple name—and partly because, as Sundevall has shown, the termination *ides* is calculated to impart a wrong notion concerning the male parent, to which, in grammatical correctness, it should refer.

"Probably it was thought unnecessary to inquire further into a matter comparatively so unimportant. But seeing that this form occurs in a wild, and only in a wild state, it would be well to find an appropriate name whereby to give it a place in the system. In the year 1869 Sundevall proposed a change in that respect, and suggested the name of *Tetrao urogallo-tetricides*, which might be regarded as satisfactory; the termination *ides*, however, could surely be dropped, partly because it is superfluous, and partly because it would prove impossible to

apply it in analogous cases. The easiest way out of the difficulty would seem to be a simple compound of the names of both parents, the name of the mother being subordinated to that of the father. Thus we get the designation *Tetrao urogallo-tetrix*.

"Of this hybrid, a considerable number of individuals are annually procured from various parts of the country, male examples being every winter found in Christiania among game brought from the interior wooded districts of the south. Most of them come from Gudbrandsdal and Österdal and the southern portions of Trondhjem Stift, and from Thelemarken, in Christiansand Stift. In several of these localities the hybrid origin of the bird is well known to the inhabitants. Along the west coast it can only be produced in the most inland tracts (*T. urogallus* is not widely distributed here). The most northerly point at which it has been found, or indeed can occur, is the Balsfjord, near Tromsö (69° 20′), this locality being the extreme range of one of the parents (*Tetrao tetrix*).

"Of the individuals hitherto examined from Norway one only was a female; this bird (wing 255 millimetres, tail 113, tarsus 42, middle toe 41+13 millimetres) is preserved in the University Museum; the others were all males in winter plumage. I once found a young male not fully coloured in the game-market of Christiania, Oct. 3rd, 1870.

"The 'Rakkelhane' would appear to consort in preference with black game; and most individuals, of which any particulars are known, have been killed among birds of that species. It has been recorded of one individual (Ödalen, in April 1871) that it was shot in its 'spel,' in a breeding-haunt of Capercaillie."

On the one Plate are figured the adult male in the foreground, and in the background the adult female, and on the second Plate the barren female and the male "Rackelhane" or hybrid, these being the specimens described, all being in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Winter plumage, St.-Petersburg market (*Dode*). *b*, ♂ *ad.* Norway (*Backhouse*). *c*, *d*, *e*, ♀ *ad.* St.-Petersburg market; *f*, *g*, *h*, ♀ *steril.* St.-Petersburg market (*Dode*). *i*, ♀ *steril.* Christiania, November 14th, 1871 (*R. Collett*). *k*, *pullus.* Sweden (*Wheelwright*).

## Genus TETRAOGALLUS.

*Tetrao* apud Pallas, Zoogr. Rosso-As. ii. p. 76 (1811).
*Lophophorus* apud Jardine & Selby, Ill. Orn. ii. p. 76 (1829).
*Tetraogallus*, J. E. Gray, Ill. Ind. Zool. ii. pl. 46 (1833–34).
*Perdix* apud Fischer de Waldheim, N. Mém. Soc. Imp. Nat. Mosc. iv. p. 240 (1835).
*Chourtka* apud Motchoulski, Bull. Soc. Imp. Nat. Mosc. i. p. 95 (1839).
*Megaloperdix* apud Brandt, Bull. Phys.-Mat. Acad. St. Pétersb. i. p. 278 (1843).
*Oreotetrax* apud Cabanis in Ersch & Grub. Encycl. xxii. p. 144 (1848).

The Snow-Partridges inhabit some of the mountain-ranges of the Palæarctic Region, only penetrating into the Oriental Region on the southern side of the Himalaya range. There are altogether five species known, two of which, *Tetraogallus caucasicus* and *Tetraogallus caspius*, inhabit the Western Palæarctic Region, the other three being *Tetraogallus altaicus*, which inhabits the Altai range, *Tetraogallus himalayensis*, which is found in the Himalayas, and *Tetraogallus tibetanus*, in Thibet. Although allied to the Grouse in many respects, these birds appear to differ from them in their habits to a large extent. They frequent desolate, rocky, precipitous places at considerable elevations in the mountains above the limits of tree-growth, where it appears almost impossible for them to obtain subsistence; but they certainly procure a sufficient supply of their food there, and subsist on roots of bulbous plants, grass-shoots, moss, and scale-fern. They are very wild and difficult of approach; and, owing to the almost inaccessible places they frequent, they are comparatively seldom obtained. Their call-note is said to be a clear prolonged whistle ending with an abrupt jerk and also a loud cackle. They breed amongst the precipices in the high mountains, their nest being a hollow in the ground scantily lined with grasses and a few feathers; their eggs, which are numerous, are dull ochreous-clay with an oil-green tinge, spotted and blotched with dull dark red; and the young are said to be able to run about almost immediately they leave the shell. These birds are strictly monogamous, and are said to be much attached to each other when paired; and both the male and female assist in taking charge of the young until they are able to forage for themselves.

The type of the genus is *Tetraogallus himalayensis*; but as *Tetraogallus caspius* is congeneric, I give its characters, as follows:—Bill rather strong, higher than broad at the base, the culmen arched to the tip, which is rounded; nostrils basal, large, covered by a membrane with a semicircular opening; an elongated bare space behind the eye; wings moderate, pointed, the second and third quills longest; tail long, full, rounded; legs strong; tarsus rather short, stout, covered in front with broad scales, and having behind a large, horny, spur-like lump; hind toe short; anterior toes long, stout, scutellate; claws strong, broad, rounded, slightly curved, obtuse.



E.Neale lith

Hanhart imp

CAUCASIAN SNOW PARTRIDGE.
FEMALE AND YOUNG.



Hanhart imp

CAUCASIAN SNOW PARTRIDGE.
TETRAOGALLUS CAUCASICUS.

# TETRAOGALLUS CAUCASICUS.

(CAUCASIAN SNOW-PARTRIDGE.)

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*Tetrao caucasica*, Pall. Zoogr. Rosso-As. ii. p. 76, and pl. (1811).
*Perdix alpina*, Fischer de Waldh. N. Mém. Soc. Imp. Nat. Mosc. iv. p. 240 (1835).
*Chourtka alpina* (Fisch.), Motchoulski, Bull. Soc. Imp. Nat. Mosc. i. p. 95 (1839).
*Tetraogallus caucasicus* (Pall.), G. R. Gray, Proc. Zool. Soc. 1842, p. 105.
*Perdix* (*Megaloperdix*) *caucasica* (Pall.), Brandt, Bull. Phys. Mat. Acad. St.-Pétersb. i. p. 278 (1843).
*Oreotetrax*, Cab. (*Tetrao caucasica*, Pall.) in Ersch & Grub. Encycl. xxii. p. 144 (1848).
*Tetraogallus caspius*, Gould, B. of Asia, pt. v. (1854, partim).
*Megaloperdix* (*Tetraogallus*) *caspia*, Bolle & Brehm, J. f. Orn. 1873, p. 1 (nec Gm.).
*Oreotetrax caspia*, Cab. J. f. Orn. 1873, p. 63 (nec Gm.).

*Gornaya Indeika*, *Chourtka*, *Intaure*, Russian.

*Figuræ notabiles.*

Pall. *l. c.*; Motchoulski, *op. cit.* pls. 8, 11.

♂ *ad.* pileo, nuchâ et collo postico cinereis: faciei lateribus et striâ in collo utrinque cinereis, gulâ et collo reliquo albis: corpore suprà nigricante, cervino vermiculato: collo imo et dorso superiore immaculatis, sed dorso reliquo, uropygio, tectricibus alarum et scapularibus maculis rufescentibus et cervinis notatis: remigibus primariis albis nigricanti terminatis: secundariis ad basin albis, versus apicem dorso concoloribus; rectricibus centralibus nigris cervino-albo vermiculatis, reliquis nigris castaneo apicatis et ad basin cervino vermiculatis: pectore et gutture imo albis nigro fasciatis: corpore reliquo subtùs cinereo, cervino-albo vermiculato, hypochondriis magis schistaceis et castaneo nigroque striatis: subcaudalibus albis: rostro sordidè flavido, versus apicem fusco: iride fuscâ: areâ nudâ circum oculos flavâ: pedibus flavo-aurantiacis.

♀ *ad.* mari similis sed sordidior et pallidior, pileo et collo postico rufescenti tinctis, striâ in colli lateribus rufescente nec cinereâ, et fasciis in pectore angustioribus.

*Adult Male* (Caucasus). Crown, nape, and hind neck ashy grey; a broad ashy grey patch covering a large portion of each side of the head passes down the side of the neck, the throat and rest of the neck being white; upper parts greyish black, finely vermiculated with buff, the lower neck and fore part of the back unspotted, the rest of the upper parts, including the wing-coverts and scapulars, marked with large spots, partly buff and partly fox-red in colour; primaries white, broadly terminated with blackish, secondaries white at the base, otherwise marked like the back; central rectrices black, vermiculated with buffy white, remaining tail-feathers black, tipped with chestnut-red, which is slightly vermiculated with black, and the base of the feathers are vermiculated with buff; lower throat and breast buffy white, closely barred with black, the bands following the contour of the feathers; rest of the underparts blackish ash-grey, closely vermiculated with buffy white, the flanks more slaty in tinge, each feather

broadly margined on each side with fox-red, and externally edged with black; under tail-coverts white; bill dull yellowish, becoming horn-brown towards the tip; bare space round the eye yellow; iris dark brown; legs orange-yellow. Total length about 21 inches, culmen 1·2, wing 10·5, tail 7·0, tarsus 2·25.

*Adult Female* (Caucasus). Resembles the male, but is much duller and paler in colour; the crown and hind neck are tinged with reddish brown, the latter especially; the stripe down each side of the neck is reddish brown, not ashy grey; and the barrings on the lower throat and breast are narrower and less clearly defined.

*Young Male* (Caucasus). Resembles the female; but the crown, hind neck, sides of the head, and stripe down each side of the neck are dull ashy grey, marked with blackish brown, and to a slight extent with buff.

*Young in down* (Caucasus). Crown, nape, and upper parts generally buffy white, blotched with black; underparts buffy white, the breast and flanks washed with grey, and a black stripe down each side of the throat, enlarging into a small patch below the eye.

*Obs.* Even at the present time but little is known about this species, and specimens are extremely rare in museums. Indeed those in my own collection are the only examples I have seen here; for there is not one in the British Museum, nor have I, until quite recently, seen one in any private collection. Owing to its rarity and the consequent difficulty in comparing specimens, it has been very generally confused with the Caspian Snow-Partridge. Gould, who figures the latter species in his 'Birds of Asia,' wrongly identifies it with the present species; and Dr. Bree, who in his letterpress also confuses the Caucasian and Caspian Snow-Partridges, figures in both editions a perfectly distinct Asiatic species (*Tetraogallus himalayensis*) as the European bird; while Mr. G. R. Gray figures (Gen. of B. iii. pl. cxxix.) *Tetraogallus altaicus*, a very distinct Asiatic bird, under the name of *Tetraogallus caucasicus*; and in his letterpress in the same work he unites *Tetraogallus caspius*, *Tetraogallus caucasicus*, *Tetraogallus altaicus*, and *Tetraogallus himalayensis*—four perfectly distinct species.

This, the true Caucasian Snow-Partridge, appears to be restricted entirely to the Caucasus range of mountains, and inhabits therefore but a restricted area. It is there found only in the more elevated portions of the mountains, close to the snow-line, and only descends into lower altitudes when driven down by severe weather. Comparatively little has been placed on record respecting the habits of this bird. Motchoulski gives (*l. c.*) a few short details, which have been translated and inserted in Mr. Gould's 'Birds of Asia' and in Dr. Bree's 'Birds of Europe;' but other Russian authors have published very few notes respecting the habits of this magnificent bird. Probably the best account on record is that given in a lecture by Dr. Radde, and printed in the 'Journal für Ornithologie' (1873, pp. 2–6), from which I translate the following notes:—"In the mountains, close to the line of continual snow, at an altitude of between 2000 and 3500 metres, I made acquaintance with these giant Partridges, respecting whose habits so little is known. The Caucasian Snow-Partridge, discovered by Steven, and very early named *caucasicus*, is found here in comparatively large numbers; and the mountaineers all affirm that it lives in peculiar friendship with the Caucasian Ibex. The bird is said to whistle in order to warn the Ibex of the approach of the hunter; and the Snow-Partridge feeds on the dung of the Ibex; so that they are in a way dependent on each other. It is, however, probable that they exist on the

same food; for when one examines both to see what they have been eating, one finds that the Ibex feeds on the various *Potentilla* plants which form the green patches in the mountains; and these low-growing plants, with their white and yellow blossoms and fruit, which bring them botanically near to the strawberry, serve for food to the Snow-Partridge as well as the Ibex. This fact explains why the two are found together; and, moreover, it is possible that the insects which are found on the dung of the Ibex may attract the Snow-Partridge. . . . The lower mountains which stretch in the direction of Armenia to other high ranges, are certainly not inhabited by the Snow-Partridge; nor is the Ibex found in the Little Caucasus. . . . The Snow-Partridge lives strictly in pairs, and inhabits an area the size of which is scarcely known. If a pair are disturbed, they rise uttering a peculiar shrill whistle and a clear alarm-note like the words *tirok*, *tirok*, *tirok*, on hearing which other pairs in the vicinity also take wing. The flight of this species is swift and direct, and reminded me much of that of the Little Bustard, but was not so whistling. I cannot say if the Snow-Partridge, like the Grouse, drums in the spring; for it is almost impossible to visit the elevated portions of the mountains at that season. It seems, however, certain that this bird never perches in a tree, and is altogether in its habits a gigantic Partridge; besides, it inhabits regions above the tree-growth. I hope, however, ere long to gain more information about this species. It certainly breeds very early in the year. I have never taken its eggs personally; but on the 17th April, when on a journey from Tiflis to St. Petersburg, at a station high up in the mountains, I procured two eggs and a bird. One of these eggs I took to London, and gave it to my dear friend Dresser, who will, I trust, ere long, figure this species in his work. As these eggs were quite fresh when I received them, one may take for granted that the breeding-season begins about the middle of April. This bird must lay many eggs; for I was fortunate enough, late in June or early in July, in the mountains, at an altitude of about 3000 metres above the sea-level, to come suddenly, by chance, on a female with her unfledged young. Like all the Gallinaceous birds, and especially those which, like this species, inhabit the stone-rubble districts, the young birds were adepts at hiding and getting out of the way; and I was astonished to see them get up close to my feet and quickly disperse. I tried long to catch one, grabbed first at one and then at another, and missed them, and was at last glad enough to secure a single one. But I saw at least thirteen to fifteen, and can therefore safely state that the coveys are about as many in number as those of allied species of Partridges. All the natives agree that this bird is exceedingly difficult to procure, as it is so very shy that only a skilful hunter can approach within rifle-range, and may be days in search of the bird before getting a shot at it." Dr. Radde adds that the natives compare this bird to the Turkey, and consider it to be a sort of mountain-Turkey, calling it "Intaure." He has succeeded almost every year in getting one or two alive, and says that it soon becomes accustomed to captivity, but does not live long in confinement, and does not seem to thrive away from its elevated habitat. Besides the old male and the egg for which I am indebted to Dr. Radde, this gentleman also brought and gave me an immature male; and I have lately received through the well-known German dealer, Mr. W. Schlüter, of Halle, another male and female (the former of which is now in the possession of Mr. C. G. Danford) and several eggs, which Mr. Schlüter informs me were obtained by a Pole who had lately been collecting in the Caucasus.

The eggs of this species in my collection are dull light clay-buff in colour with an oil-green

tinge, and are somewhat sparingly spotted with dull rufous. In size they vary from $2\frac{25}{40}$ by $1\frac{31}{40}$ inch to $2\frac{26}{40}$ by $1\frac{32}{40}$ inch.

The specimens figured and described are those in my own collection below enumerated, the adult and young males being on the one Plate, and the female and two young in down on the second Plate.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Kazbek, Caucasus, May 1871 (*Dr. G. Radde*). *b*, ♂ *juv.* Kazbek (*Radde*). *c*, ♀ *ad.* Caucasus, April 1876 (*W. Schlüter*). *d*, *e*, *pulli.* Caucasus (*Mlokosiewicz*).

*E Mus. C. G. Danford.*

*a*, ♂ *ad.* Caucasus, April 1876 (*W. Schlüter*).



E.Neale lith

Hanhart imp

CASPIAN SNOW PARTRIDGE.

TETRAOGALLUS CASPIUS.

# TETRAOGALLUS CASPIUS.

(CASPIAN SNOW-PARTRIDGE.)

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*Tetrao caspius*, S. G. Gmel. Reis. Russl. iv. p. 67, pl. x (1784).
*Perdix caspia* (Gm.), Lath. Ind. Orn. ii. p. 655 (1790).
*Lophophorus nigelli*, Jard. & Selby, Ill. Orn. ii. p. 76.
*Tetraogallus caspius*, Gould, B. of Asia, pt. v. (1854, partim).
*Tetraogallus caspius* (Gm.), Bp. Compt. Rend. xlii. p. 882 (1856).
*Megaloperdix raddei*, Bolle & Brehm, J. f. Orn. 1873, p. 4, footnote, desc. null.
*Tetraogallus challayi*, Oustalet, Bull. Soc. Philomatique, 1875, pp. 54, 56.
*Tetraogallus tauricus*, Dresser, Proc. Zool. Soc. 1876, p. 675.
*Oreotetrax caspia* (Gm.), Cab. Journ. für Orn. 1876, p. 217.

*Ur-Keklik* in the Taurus; *Kabk-i-dareh*, Russian.

*Figuræ notabiles.*

Wolf, Zool. Sketches, pl. 40; Gould, B. of Asia, part v.; Fritsch, Vög. Eur. taf. 31. fig. 7; Jard. & Selby, Ill. Orn. ii. pl. 76.

♂ *ad.* pileo sordidè cinereo-cano vix cervino tincto, versus nucham cervino-cinereo: collo postico et dorso antico cervino-cinereis: corpore supra reliquo sicut in *Tetraogallo caucasico* picturato, sed pallidè cervino-cinereo nec saturatè cinereo: alis sicut in *T. caucasico*, sed tectricibus majoribus magis cæruleis et ad basin minus vermiculatis: caudâ sicut in *T. caucasico*, sed pallidiore: fronte, striâ superciliari, capitis lateribus et gulâ cervino-albis: regione suboculari pallidè canâ, et striâ magnâ in colli lateribus utrinque saturatè canâ: gutture et pectore superiore cinereo-canis, plumis cinereo-cervino terminatis et nigro guttatis: pectore reliquo cinereo-cervino, griseo-nigro vermiculato, plumis omnibus ad basin cæruleo-canis: abdomine centrali schistaceo-fuliginoso: crisso sordidè cervino, subcaudalibus cervino-albis: hypochondriis cæruleo-canis, utrinque castaneo striatis et nigro marginatis, plumis nonnullis in parte supremâ vermiculatis, et plumis in parte imâ cinereo-cervinis nigro-cinereo vermiculatis et cervino-castaneo marginatis: rostro flavido, ad basin pallidiore, naribus rufo-aurantiacis: plagâ nudâ circum et infra oculos lætè flavâ: pedibus lætè rufo-aurantiacis, unguibus saturatè corneis: iride fuscâ.

♀ minor et sordidior: pileo vix cervino et saturatè griseo notato: striâ in colli lateribus et gutture antico nigro notatis, hôc griseo vermiculato: plagâ nudâ oculari minore: rostro et pedibus sicut in mare, sed paulo sordidioribus.

*Adult Male* (Koroskeui, Taurus, 15th April, 1876). Crown dull ashy blue, with a buff tinge gradually merging into ashy buff, this latter colour pervading the hind neck and fore part of the back; rest of the upper parts as in *Tetraogallus caucasicus*; but instead of the general tinge of colour being clear dark grey, it is lighter buffy grey; wings as in *Tetraogallus caucasicus*, but the larger wing-coverts are rather bluer and less vermiculated on the basal portion; tail as in *Tetraogallus caucasicus*, but rather paler; forehead, a streak over the eye, sides of head and neck creamy white, the portion below the eye

pale blue-grey, connected with which is a dull darker blue-grey stripe down the side of the neck; entire lower throat and upper breast blue-grey, the feathers tipped with ashy buff, this band on the sides of the neck becoming ashy buff and merging into the hind neck; fore part of the band irregularly but boldly spotted with black; rest of the breast to the abdomen ashy buff finely vermiculated with blackish grey, all the feathers dove-blue on the concealed basal portion; centre of the abdomen sooty slate, gradually fading into dull buff on the crissum and to creamy white on the under tail-coverts; flank-feathers clear blue-grey on the centre, with a chestnut stripe on each side, and an outside margin of black, some of the feathers on the upper flanks vermiculated like the breast, and those on the lower flanks buffy ash, vermiculated with blackish grey, and margined with buffy chestnut; bill yellowish horn, paler at the base; nostrils orange-red; bare space round the eye and patch below the eye brilliant Indian-yellow; iris dark brown; legs rich orange-red; claws dark horn. Total length about 26 inches, culmen 1·7, wing 11·8, tail 8·0, tarsus 2·6.

*Adult Female* (Giawikeuy, 27th April). Differs from the male in being rather smaller in size and duller in colour; the crown is slightly marked with light buff and dark grey; the stripe on each side of the neck and the band on the lower throat are more buff in tinge, the latter vermiculated with grey, and both mottled with black; soft parts as in the male, but rather duller, the bare patch behind the eye smaller in extent, and the spur on the back of the tarsus is wanting. Total length 22·5–23 inches, culmen 1·4, wing 10·7, tail 7·2, tarsus 2·25.

As stated in my article on *Tetraogallus caucasicus*, there has been great confusion as regards the Snow-Partridges, and most authors have erroneously considered the present species to be identical with *Tetraogallus caucasicus*. First described (*l. c.*) by Gmelin from Gilan, it was again described and figured by Jardine and Selby (*l. c.*) from the same locality; but both descriptions are somewhat vague, the latter being taken from a young bird. When Dr. Radde paid me a visit some time ago he assured me that there were two species of Snow-Partridge within the limits of the Western Palæarctic Region; and Dr. Severtzoff also discussed the matter with me when here, and we agreed to try and work the question out; and Mr. Danford, who was then preparing to undertake a journey through Asia Minor, promised to try and obtain specimens. When Dr. Severtzoff was in Paris he saw in the Paris Museum a Snow-Partridge from Erzeroum, which he at once perceived was neither *Tetraogallus caucasicus* nor *Tetraogallus himalayensis*; and he called the attention of M. Oustalet to it, surmising that it would prove to be the second species supposed to occur in Asia Minor. M. Oustalet, on the strength of what Dr. Severtzoff told him, described the bird as new under the name of *Tetraogallus challayii*; but of this I was unaware, as the description was published in a journal which I had not had an opportunity of seeing. When, therefore, Mr. Danford brought back a series of specimens which I failed to identify with either Gmelin's or Jardine and Selby's descriptions, I concluded that it was an undescribed species, and gave it the name of *Tetraogallus tauricus*; but subsequently Mr. Danford ascertained, by a comparison of his specimens with the bird figured by Jardine and Selby, which is now at Edinburgh, that the birds occurring in Persia and in the Taurus are specifically identical. The correct name of these birds will therefore be *Tetraogallus caspius*.

Mr. Danford has just prepared an account of this species for publication in 'The Ibis,' and has kindly permitted me to make use of the same; I have therefore transcribed it as follows:—"The range" of *T. caspius*, "though already known to be pretty wide, is not yet fully determined.

Its probable western limits are the Gök, or Geyee, Mountains of Southern Asia Minor. Thence it extends eastward through the rest of the Taurus into Armenia, Kurdistan, and Northern Persia, as far as the south-east corner of the Caspian. It is also reported to occur in the Dinar Mountains, in the south-west of Persia.

"Though by no means uncommon in the rocky ranges of Cilicia, the Snow-Partridge is, owing to its extreme wariness, and the difficult character of the ground it frequents, a very hard bird to obtain. So shy is it, that the natives say it takes the wind of a man like an ibex. The coveys in summer time are doubtless more easy of approach than the adult birds.

"This species frequents in winter the regions just above the limits of the tree-growth, rarely descending, unless in exceptionally severe weather; and even then it usually takes to the holes and caves with which the limestone rocks abound. From the sheltered interstices of these rocks it gets its food, which at this season consists, not, as some writers say, of the droppings of the wild goats, or, as the natives often asserted, of snow and stones, but of bulbous roots, young grass-blades, moss, and quantities of the common scale-fern (*Ceterach officinarum*). The young, no doubt, after the manner of most game birds, feed much on insects. The above diet seems to agree well with these birds, as females shot in March and April were covered with fat, males less so. They are good eating, more like the common Grey Partridge than any thing else. The weight of a large male was $7\frac{1}{2}$ lb., that of a female 6 lb.

"The Snow-Partridge pairs very early, certainly as soon as the beginning of February; but it is not until the end of March that the males begin calling. The call-note is a full, clear, prolonged whistle, ended with an abrupt jerk. It is audible at a great distance, and is not difficult to imitate. The other cry which this species possesses is a loud cackle, uttered only by the male. It is begun when the bird is disturbed, and is kept up during the whole time of its flight, which is sometimes pretty long, and is best compared to that of the Ptarmigan. On alighting the performance is often wound up by a whistle. The natives imitate these notes by the syllables *luk-luk-luk-luk ōoooo*. This bears about as much likeness to the natural notes of the bird as such imitations usually do on paper, which, except in the case of very simple-noted birds, appears to me to be remarkably small. The transcribing of complicated bird-notes depends so much upon the taste and fancy of the speller, that two interpretations of a bird-song very rarely coincide, and the series of syllables set down really convey no definite idea of the actual notes.

"The present species begins breeding in the middle of April. Two of the three nests obtained were taken on the Bulgar dagh, April 23rd and 25th, and contained six and four eggs respectively. The other, which we had the good fortune to take ourselves on the Karanfil dagh on April 23rd, also contained six eggs.

"Starting early, to escape the heat of the sun, we began to climb the north-west side of the mountain. The first part of the way was up steep slopes covered with bushes, loose stones, and a few old cedar and fir trees. By the time the foot of the rocks was reached tattered junipers were the only trees left. Here the call of a Snow-Partridge far above our heads sounded a note of encouragement. After going up a pretty good height the cry was again heard, and the sharp eyes of one of the guides made out two Ur-kekliks—a male, perched on a high piece of rock, and a female walking about below him. A stalk was attempted; but the birds discovered us, and

went off with a loud defiant cackling. As they did not return, though patiently waited for, we divided our party of four, which was made up of a strapping young Turk, a celebrated sportsman called Zedi Aijlik (the seven-months one), our servant John Ross, and myself. Agreeing to meet on the ridge of the mountain, Zedi Aijlik and myself took the right side, the others the left. While climbing laboriously up the snow-filled gullies and round the cliff-ledges the echoes of shouts sounded in the distance. Replying, we made in their direction, and reached a bay-shaped corrie, on the opposite side of which our coadjutors were perceived. The clear mountain-air enabled us to hear the good news that they had found a nest; and with considerable difficulty we joined them. It appeared that they had seen a cock bird; and while endeavouring to stalk him by clambering up a steep narrow gully, the female had flown off a small ledge close above their heads. The nest was placed on this ledge, and was sheltered by an overhanging rock, and further by the gnarled old stump of a juniper, which, no doubt, owed its existence at this elevation of 7000 feet to the very sheltered character of the position.

"The nest was a deep round hollow scraped in the stony earth, and slightly lined with dry grass and a few feathers of the bird itself. It contained six eggs.

"The eggs are in colour dull light clay, with a faint oil-green tinge, some darker, others lighter in ground-colour. The markings are lighter or darker red, in spots or small blotches. Some specimens are but slightly marked, others closely spotted. In size they agree with those of *Tetraogallus caucasicus*.

"The other nests, which were brought from the Bulgar dagh, were described as being of similar construction, except that one of them was lined with bunches of green fir-needles. From general accounts it seems that six to nine is about the usual number of eggs laid; but the old chief of Anascha told us how a year or two ago a nest of seventeen eggs was brought to him. These he put under a hen; and fifteen were hatched. While young the little Ur-kekliks ran about the premises like common chickens, and as they grew older went out to the rocky hills close by, coming home every evening; but when spring arrived they all gradually disappeared, and never returned. As all the sportsmen repudiated the idea of seventeen eggs being found in one nest, it is probable that old Hadji Achmed had two layings brought to him at the same time.

"Stripping some bark from the old juniper, a rough plait was made, which, the ends being turned up and tied together, formed a very decent kind of basket for our spoil. Two men were left to watch for the return of the owners of the nest; and the old sportsman and myself went up to the ridge of the mountain. Here we examined a long line of cliffs by rolling down stones. Only one hen bird was seen, which probably rose off a nest; but the place was utterly inaccessible. On rejoining our companions we found the birds had only once flown past, and had gone further on. Taking that direction home, the pair dropped suddenly off a range of rocks above us, and the male was shot. This additional good luck made the way home down the steep flowery slopes and through the thick woods seem short enough.

"The large series of *T. caspius* which was obtained exhibits a few slight variations in size and colour. The general grey of the plumage is, in some specimens from the Bulgar dagh, strongly tinged with reddish fawn, while in others from the Ala dagh it is exceedingly pure.

In a few males the white neck-stripes meet below; and there is a very old female which has completely assumed the male plumage.

"One point which puzzles me is the etymology of the name Ur-keklik. The latter part is simple enough, being the universal Turkish word for Partridge; but of the former syllable I can get no interpretation, nor does it, though universally used in connexion with the present species, appear to be a Turkish word, and it is probably in the ancient Chaldee that the signification of the word must be looked for."

In a footnote Mr. Danford remarks that in Hungarian "Ur" means noble,—which meaning it doubtless has also in being used for the present species; for the Russian authors give as the equivalent of its name in German "Königs Rebhuhn," or Royal Partridge.

The specimens of this Snow-Partridge figured are a pair in my own collection, for which I am indebted to Mr. C. G. Danford. Besides the series of about twenty specimens collected by that gentleman, I have, in the preparation of the above article, examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀, *b*, ♂. Anascha, Taurus, March 27th, 1876 (*C. G. Danford*).

## Family TURNICIDÆ.

### Genus TURNIX.

*Tetrao* apud Desfontaines, Mém. de l'Acad. Roy. des Sc. 1787, p. 500.
*Perdix* apud Latham, Ind. Orn. ii. p. 656 (1790).
*Turnix*, Bonnaterre, Tabl. Encycl. i. p. 5 (1791).
*Ortygis* apud Illiger, Prodromus, p. 242 (1811).
*Hemipodius* apud Temminck, Pig. et Gall. iii. p. 626 (1815).

The Hemipodes differ so much from the other gallinaceous birds (standing, indeed, alone in some respects) that they cannot be ranged with either the Phasianidæ or the Tetraonidæ, but must be placed in a family by themselves. These birds inhabit the Ethiopian and Oriental Regions, only one species being found in the Western Palæarctic Region. They are said to be wild and shy in their general habits, frequent localities which are covered with bushes and low trees, and are usually found amongst the dense thickets, whence it is difficult to flush them, as they prefer to trust to running and hiding for safety. They are not migratory, but remain in the same districts at all seasons of the year. They feed on seeds and other vegetable matter, and, to some extent, also on insects of various kinds. Their nest is a mere depression in the ground, lined with a few dry grasses, and situated in some well-concealed place, usually in a dense thicket. They are said to lay only four eggs, which are greyish or buffy white, tolerably closely marked with pale purplish grey and dark brown or purplish brown.

*Turnix sylvatica*, the type of the genus, has the bill straight, rather slender, decurved towards the tip; nostrils lateral, longitudinal, bare, partly covered by a membrane; wings moderate, broad, the secondaries as long as the primaries, the second quill longest, the first being scarcely shorter; tail short, soft, decurved, the feathers as soft as those of the coverts, by which the tail is concealed; tarsus rather long, slender, scutellate; toes moderate, slender, compressed, the hind toe wanting; claws small, curved, acute.



ANDALUSIAN HEMIPODE
TURNIX SYLVATICA

# TURNIX SYLVATICA.

(ANDALUSIAN HEMIPODE.)

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*Tetrao sylvaticus*, Desf. Mém. de l'Ac. Roy. des Sc. 1787, p. 500, pl. xiii.
*Tetrao gibraltaricus*, Gmel. Syst. Nat. i. p. 766 (1788).
*Tetrao andalusicus*, Gmel. tom. cit. p. 766 (1788).
*Perdix gibraltarica* (Gm.), Lath. Ind. Orn. ii. p. 656 (1790).
*Perdix andalusica* (Gm.), Lath. tom. cit. p. 656 (1790).
*Turnix africanus*, Bonnat. Tabl. Encyclop. Ois. i. p. 6 (1791).
*Turnix gibraltarica* (Gm.), Bonnat. tom. cit. p. 7 (1791).
*Turnix andalusica* (Gm.), Bonnat. tom. cit. p. 7 (1791).
*Ortygis*, Illiger (*Tetrao gibraltaricus*, Gm.), Prodromus, p. 242 (1811).
*Hemipodius tachydromus*, Temm. Pig. et Gal. iii. p. 626 (1815).
*Hemipodius lunatus*, Temm. tom. cit. p. 629 (1815).
*Turnix andalusica* (Gm.), Vieill. Nouv. Dict. xxxv. p. 45 (1819).
*Turnix gibraltarica* (Gm.), Vieill. tom. cit. p. 45 (1819).
*Ortygis gibraltarica* (Gm.), Bp. Comp. List, p. 44 (1838).
*Ortygis andalusica* (Gm.), Keys. & Blas. Wirbelth. Eur. p. 66 (1840).
*Turnix gibraltarius*, C. L. Brehm, Vogelfang, p. 277 (1855).
*Turnix albigularis*, Malh. Faune Orn. de l'Alg. p. 26 (1855).
*Turnix sylvaticus* (Desf.), Bp. Cat. Parzud. p. 13 (1856).

*Turnix tachydrome*, French; *Toirão do mato*, Portuguese; *Torillo*, Spanish; *Quaglia tridattila*, Italian; *Semmana*, Arabic; *Zerquil*, Moorish.

*Figuræ notabiles.*

Werner, Atlas, *Gallinacés*, pls. 17, 18; Gould, B. of Eur. pl. 264; id. B. of G. Brit. iv. pl. 16; Roux, Orn. Prov. pl. 263 bis.

♀ *ad. ptil. æst.* pileo nigro-fusco vix fulvido notato, centraliter striâ albo-cervinâ: capitis lateribus et mento cervino-albidis, nigro fasciatis: corpore suprà nigro-fusco, transversim castaneo et nigro notato, plumis ferè omnibus cervino-albo marginatis: tectricibus alarum ochraceo-castaneis, conspicuè nigro et albo notatis: remigibus nigro-fuscis, extùs cervino-albo marginatis: colli lateribus et hypochondriis albidis, conspicuè nigro guttatis: gutture centraliter pallidè ferrugineo: abdomine cervino-albo: subcaudalibus ochraceis: rostro ad basin sordidè carneo, versus apicem nigro-corneo: iride flavo-fuscâ: pedibus pallidè brunneis.

♂ *ad.* feminæ similis sed minor et sordidior.

*Ad. ptil. hiem.* corpore suprà sordidiore, plumis latiùs albido marginatis: corpore subtùs pallidiore, ferè omnino albo: mento albo.

*Adult Female* (Malaga, 25th April). Crown blackish brown, slightly marked with reddish brown, and with a central brownish buff streak; cheeks, sides of the head, and upper throat buffy white, closely barred with black; upper parts blackish brown transversely marked with chestnut and black, most of the feathers having also buffy white margins; wing-coverts boldly blotched or spotted with blackish on a dull rufescent or ochreous-chestnut ground, and broadly marked with buffy white; quills blackish brown, externally narrowly margined with buffy white; sides of the throat, neck, and flanks buffy white, with a large crescent-shaped mark of blackish brown on each feather; centre of the throat warm pale ferruginous, gradually fading towards the abdomen into buffy white; under tail-coverts warm ochreous; bill dull flesh-colour at the base, becoming blackish at the tip; iris light yellowish brown; legs light brown. Total length about 8 inches, culmen 0·6, wing 3·6, tail 1·7, tarsus 1·05.

*Adult Male* (Algeria, December). Differs from the female in being smaller, in having the upper parts less richly coloured and the white margins larger, the chin and upper throat white, the underparts much paler, and the markings on the sides of the throat smaller and only extending to the upper flanks. Total length about 6·5 inches, culmen 0·5, wing 3·25, tail 1·7, tarsus 1·0.

I have described the male in winter plumage, as the sexes do not differ much in plumage, but only in size, but the winter dress differs somewhat from that worn in the summer, being duller, the underparts whiter, and the margins to the feathers on the upper parts broader.

*Young.* Resembles the adult in winter dress; but there is more white in the markings of the plumage, the underparts are white, and the markings on the sides of the neck and flanks are reduced to dark brown dashes or blotches.

*Young in down* (*fide* Loche). Covered with down, black, white, and rufous in coloration; there is a black stripe on the centre of the head, and three similar ones on the back, which are continued to the rump.

Being a resident species in the localities it inhabits, the present bird has not a wide range; for it has only been found in Southern Europe and North Africa, except as a rare straggler: in one instance it has been obtained as far distant from its usual haunts as the British Isles, where a single specimen was shot on the 29th October, 1844, near Chipping Norton, in Oxfordshire. It has not occurred in Scandinavia or Germany; and in France it appears to be only known in the extreme south, where it is stated to have rarely occurred; but Professor Barboza du Bocage includes it in his list of the birds of Portugal as being common in Alemtejo. In Spain it is, according to Mr. Howard Saunders (Ibis, 1871, p. 224), "abundant near Algesiras, and not uncommon near Malaga in April; but elsewhere probably rare;" and Colonel Irby writes (Orn. Str. Gibr. p. 140) as follows:—"On the Spanish side [of the Straits] I was unable to detect any migration of this Bush-Quail, though it is said by Andalucian bird-catchers and cazadores to be migratory. The probability is that they are so; but yet I am inclined to think the reverse, as they are found in the same localities in equal numbers at all seasons of the year.

"Near Gibraltar it is a very local bird and nowhere plentiful, apparently less so than is really the case; for they are difficult birds to flush, and if put up once will rarely rise a second time. Scattered here and there, they chiefly frequent palmetto scrub, and appear to be most common near the coast, being more abundant to the east of the Queen of Spain's chair, especially about the Lomo del Rey and a place called Los Agusaderas. In their flight and habits, from what I could observe of them, they resemble the Indian Bush-Quail (*Turnix dussumieri*).

"I have often seen them among the rough grass and bents close to the sea-shore. One bird in particular, I remember, for a long time frequented a patch of thick herbage near the mouth of the 'First River;' and whenever I rode by, my dog used to flush it, till at last one day, wanting a specimen, I went purposely to shoot the bird; but, of course, upon this occasion my friend was not to be found, nor did I again see one there for some months.

"They are scarce between Algeciraz and Tarifa, but occur towards Vejer, and are tolerably plentiful on the palmetto-covered high ground above Casa Vieja, called La Mesa; further than this I did not meet with it personally; nor could I obtain any near Seville."

According to Salvadori it has only once occurred in Italy, a specimen having been sold in the market at Nice; but in Sicily it appears to be common, for Lord Lilford writes (Ibis, 1875, p. 24) as follows:—"I believe, from information obtained from Professor Doderlein, that Sicily is certainly the headquarters of the Hemipode in Europe, as he told me, and states in his recently published work on the ornithology of Sicily, that he had often shot from ten to fifteen specimens in one day in the neighbourhood of Alicata, Girgenti, and Sciacca. I certainly never heard of a similar abundance in any part of Spain." On reference to Professor Doderlein's work I find that while, with the single exception of a specimen obtained near Palermo, this species is not known in the northern portion of the island, in the southern districts, especially about Licator, Terranova, Girgenti, Sciacca, Mazzara, &c., it is common and resident, no migration being ever noticed; but it is more easily found in September and October, when in coveys, being a solitary bird at other times. It prefers uncultivated and undulating ground covered with thick herbage and scrub, such as *Arundo ampelodesmos* and *Camerops humilis*, and is also to be found by the side of sluggish streams. It is slow to take flight, and does not remain long on the wing, preferring to trust to its feet; for it is an excellent runner. It does not appear to occur in Sardinia.

Eastward of the above localities the Hemipode does not appear to have been met with north of the Mediterranean; but in North Africa it ranges as far east as Egypt, where it is very rare. Von Heuglin says that he only observed it in the western portion of the district visited by him, viz. in the vicinity of Beni Ghazi, but he thinks that he saw one in the province of Schergieh, in Lower Egypt. In North-west Africa, however, it is common and resident. Mr. Taczanowski says that he met with it in Algeria, frequenting localities covered with small bushes close to mountains; and all the collectors who have visited that country appear to have met with it in suitable localities. M. Favier says (*fide* Colonel Irby, *l. c.*) that it is "both resident and migratory in the vicinity of Tangier, and a much less common bird than the ordinary Quail (*Coturnix vulgaris*); those which migrate pass northward during May and June, and are seen on the return passage in September and October." So far as I can ascertain, there does not appear to be any record of its occurrence further south than Morocco.

In habits the present species appears to differ considerably from the common Quail. The best account I can find of its habits is from the pen of Major Loche, who says that it is monogamous, and inhabits localities which are covered with bushes and dwarf palms. It is unsociable, caring but little for the society of others of its own species; hence it is usually seen alone; and in its general habits it is wild and shy. It runs more than it flies; and as soon as it perceives a sportsman it takes refuge amongst the dense bushes, whence it is almost impossible to dislodge it, especially when it has once been flushed. It will sooner allow itself

to be caught with the hand or by the dogs than take wing; but the denseness of the thickets usually proves a good protection to it. It feeds on insects and seeds; and in many individuals dissected by M. Loche he found the seeds of wild plants, and other vegetable matter, remains of ants, and a few small stones well worn. It nests under a tuft of grass or a bush, the nest being a small depression in the soil, lined with dry grasses, or sometimes without any lining whatever, but always situated in a thicket so thorny and impenetrable that the nest is seldom found. Two broods are usually raised in the season, old females depositing the first clutch of eggs in May, and the second in August, and younger ones in June and September; and four or five eggs are usually deposited. Both sexes undertake the labour of incubation and of rearing; but should the female be killed, the male will hatch out the eggs and rear the young. As soon as these latter are able to shift for themselves their parents leave them, and make preparations for rearing a second brood. The young can run as soon as they are hatched, and are carefully tended by their parents, who call them together with a note resembling the syllable *crroo* several times repeated; and the young answer by a chirp like the note of the young Quail.

The Hemipode is not as erratic as the Quail, but is to be met with throughout the year in the locality it has chosen for its abode; and it is more numerous near the coast than far inland.

In spite of its shyness when in a wild state, the present species soon becomes accustomed to captivity; and Loche gives many details respecting the tameness of some which he kept in confinement. A female deprived of her mate laid a number of eggs, most of which were, I believe, sold to different collectors in Europe; and Loche states that between the 3rd March and the 15th October this bird laid upwards of fifty eggs. The following year a pair bred there in confinement and reared four young; but when they had commenced to breed a second time, they were accidentally killed.

The ordinary note of this bird resembles the syllables *crroou*, *crroou*, *crroou*; but besides this cry, Loche writes, "it utters at daybreak and at sunset a deep mournful note, a most peculiar sound, which can only be compared to a very faint and low reproduction of the cry of the Bittern. When producing this strange sound the bird throws up towards the back the covering of the abdomen, so that it appears to have scarcely any abdomen left; and drawing the head down between its shoulders it utters, without opening its beak, like a ventriloquist, a hollow sound that appears to be far distant. Both sexes utter this sound; but the male does so more frequently than the female. Many people, especially sportsmen, on hearing it, flatly refused to believe that it was produced by my Hemipodes; and in order to convince them, I have had the cage with the birds taken to a distant place, where, by watching them carefully, my friends could convince themselves that the sound was really produced by the birds." Some interesting notes respecting the habits of the Hemipode, from the pen of Canon Tristram, were published by Mr. Hewitson, who gave, in the first volume of 'The Ibis' (pl. ii.), an excellent plate of the eggs of this bird together with some other oological rarities. "Although not rare in the wooded districts of Northern Algeria," Canon Tristram writes, "its nest had until last year eluded the researches of all the French collectors. Various eggs had from time to time come into the hands of the Paris dealers, the produce of birds in captivity; but these two eggs are, as far as I can ascertain, the very first from a bird in a state of nature. They were taken by Captain Loche, of the French army, in Kobah forest, on July 11th, 1857. The nest contained seven eggs, nearly

fresh. It was placed on the ground in the midst of a dense thicket of underwood, most ingeniously concealed, and where no dog could penetrate to put up the bird. It was in such situations that I had frequently before found the Hemipode, which never occurs in the plains or in the desert. When disturbed, it is scarcely possible to make it take wing. When beaten out of a bush, it half runs, half flies to the nearest cover, somewhat after the manner and with much of the appearance of Baillon's Crake. I do not believe that it migrates in the Atlas, as specimens are occasionally found at all times of the year; nor does it appear ever to congregate, either in flocks or bevies, after the manner of the Quail, to which, indeed, in all its habits it affords a striking contrast." Colonel Irby (*l. c.*), writing respecting the nidification of the present species, says, "the nest is, from the skulking habits of the bird, extremely difficult to obtain. I never had the good fortune to find one, but had one lot of eggs brought to me from near San Roque on the 6th July, 1869. The finder said the nest was under shelter of a palmetto bush, and merely consisted of a few bits of dried grass. These eggs, four in number (which is, without doubt, the regular complement laid by all the Bush-Quails, *Turnix*), were very slightly incubated, and in appearance much resemble those of the common Pratincole (*Glareola torquata*), only being, of course, much more diminutive. Later in July I received several eggs from Mogador, which exactly resembled the Spanish ones; but not having been blown, and being hard sat-on, the shells were so tender and rotten that I could do nothing with them. My friend Mr. Reid, of the Royal Engineers, informs me that he had the luck to find a nest, placed in grass near the shore on the eastern beach, on the 19th of May, 1873; this nest contained four eggs (incubated), as did another from near Tangier obtained by Olcese."

I possess eggs of the present species from Loche—some being from birds kept in captivity, and others taken wild. The former are rather paler in coloration than the latter, which have the ground-colour greyish or buffy white and are tolerably closely marked with pale purplish neutral-tinted shell-spots and dark brown or purplish brown surface-blotches. In shape they resemble the eggs of the common Quail, and in size vary from $\frac{37}{40}$ by $\frac{31}{40}$ to $1\frac{3}{40}$ by $\frac{32}{40}$ inch.

The specimens figured are an adult female in full breeding-dress in the foreground, and a male in winter plumage in the background, these being the birds above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Gibraltar, December 1874 (*Colonel Irby*). *b*, *c*, ♀. Malaga, Spain, April 25th, 1869 (*H. Saunders*). *d*, ♂. Tangier (*Olcese*). *e*, ♂. Algeria, December (*Verreaux*).

*E Mus. Howard Saunders.*

*a*, ♀. Malaga, January 3rd, 1872. *b*, ♀. Malaga, June 10th, 1872. *c*, ♂. Malaga, September 23rd, 1872 (*H. S.*).

## Order III. GRALLÆ.

### Family RALLIDÆ.

Genus RALLUS.

*Rallus*, Brisson, Orn. v. p. 151 (1760).
*Scolopax* apud S. G. Gmelin, Reise d. Russl. iii. p. 90 (1774).
*Aramus* apud G. R. Gray, Hand-l. of B. iii. p. 59 (1871).

The species included in this genus inhabit the Palæarctic, Ethiopian, Oriental, Nearctic, and Neotropical Regions, one species only being found in the Western Palæarctic Region. They inhabit the grassy and reed-covered margins of lakes and rivers, and any damp, well-covered localities where they can find an abundance of food and have good opportunities of concealment. They wade in shallow water, and are able to swim, and even dive, when pursued and closely pressed. They feed on worms and small aquatic insects of various kinds, and to some extent also on seeds. Their flight is laboured and heavy; and they seldom fly far when flushed, but drop into cover again after having flapped heavily a short distance. Their call-note is loud and clear; but, as a rule, they are not noisy birds. They breed in damp localities, constructing a loose nest of dried leaves and aquatic plants, in which they deposit six or seven eggs, which are very pale stone-buff in colour, sparingly spotted and blotched with purplish grey and dark red. The young birds are able to leave the nest soon after they are hatched, and are very expert in hiding should danger threaten.

*Rallus aquaticus*, the type of the genus, has the bill longer than the head, slender, slightly decurved, compressed in its whole length, tapering slightly to the tip; nasal groove extending along two thirds of the bill, the nostrils linear, partly covered by a membrane; wings short, concave, rounded, the first quill shorter than the sixth, the second longest, the third scarcely shorter; tail short, rounded, the feathers broad, rounded, and weak; legs and feet long, the lower part of the tibia bare; tarsus rather long, scutellate; toes very long, slender, compressed, the claws slender, arched, compressed, slightly tapering.



WHeale lith

Hanhart imp

WATER-RAIL.
RALLUS AQUATICUS.

# RALLUS AQUATICUS.

(WATER-RAIL.)

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*Rallus aquaticus*, Briss. Orn. v. p. 151, pl. xii. fig. 2 (1760).
*Rallus aquaticus*, Linn. Syst. Nat. i. p. 262 (1766).
*Scolopax obscura*, S. G. Gmel. Reise d. Russl. iii. p. 90, pl. xvii. (1774).
*Le Râle d'eau*, Buff. Hist. Nat. Ois. viii. p. 154, pl. xiii. (1781).
*Rallus sericeus*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 33 (1816).
*Rallus germanicus*, C. L. Brehm, Vög. Deutschl. p. 690 (1831).
*Rallus indicus*, Blyth, Journ. As. Soc. Beng. xviii. p. 820 (1849).
*Rallus minor*, C. L. Brehm, Vogelfang, p. 328 (1855).
*Rallus fuscilateralis*, C. L. Brehm, Vogelfang, p. 328 (1855).
*Aramus aquaticus*, G. R. Gray, Hand-l. of B. iii. p. 59. no. 10408 (1871).

*Râle d'eau*, French; *Frango d'agua*, Portuguese; *Rascon*, Spanish; *Porciglione*, Italian; *Gallotz-ta-scitua*, Maltese; *Wasserralle*, German; *Waterral*, Dutch; *Vandrixe*, Danish; *Jearakona*, Færoese; *Keldusvin*, Icelandic; *Vandrixe*, Norwegian; *Vattenrall*, Swedish; *Rantakana*, Finnish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 749; Werner, Atlas, *Gralles*, pl. 33; Kjærb. Orn. Dan. taf. 38, and Suppl. pl. 18; Fritsch, Vög. Eur. taf. 35. fig. 8; Naumann, Vög. Deutschl. taf. 235; Sundevall, Svensk. Fogl. pl. 14. fig. 1; Gould, B. of Eur. pl. 339; id. B. of G. Brit. iv. pl. 86; Schlegel, Vog. Nederl. pl. 257.

*Ad.* pileo, collo postico et corpore suprà olivaceo-fulvidis conspicuè nigricanti notatis: tectricibus alarum minus nigricanti notatis: remigibus olivaceo-fuscis: caudâ nigro-fuscâ, rectricibus pallidiore olivaceo-fusco marginatis: loris fuliginosis: capitis lateribus, gulâ, gutture et corpore subtùs saturatè schistaceo-cæruleis: abdomine imo centraliter fusco-cervino, hypochondriis nigris albo transfasciatis, subcaudalibus nigris cervino apicatis, sed imis caudâ proximis fere omnino albis: rostro fusco, maxillâ inferiore rubrâ: iride rubrâ: pedibus fusco-incarnatis.

*Juv.* adulto similis sed suprà magis olivaceus, gutture et pectore sordidioribus et cervino lavatis, mento albido.

*Adult Male* (Stockholm). Crown, nape, and hind neck blackish, marked with fulvous brown; upper parts generally olivaceous fulvescent brown, broadly blotched with blackish, the wing-coverts but slightly marked with this colour; quills deep brown with an olivaceous tinge; tail rather darker brown, the feathers bordered with olivaceous brown; lores sooty blackish; sides of the head, throat, neck, breast down to the upper abdomen, deep slaty blue; abdomen and flanks black barred with white, the centre of the lower abdomen brownish buff or creamy brown with a grey tinge, this colour extending onto the upper part of the under tail-coverts, which, however, are black at the base, the lower portion next to the tail being white, forming a conspicuous white patch; bill dark brown, except at the base of the lower

and edge of the upper mandible, where it is red; legs fleshy brown; iris red. Total length about 10 inches, culmen 1·62, wing 4·6, tail 2·12, tarsus 1·72.

*Adult Female* (Copenhagen). Does not differ from the male in plumage, except that the colours are perhaps a little duller.

*Young* (Butrinto, Albania). Resembles the adult, but has the upper parts more olivaceous, the throat and breast duller, the feathers sullied with buff; there is more creamy brown on the lower abdomen; and the chin and upper throat are white, the latter tinged with slate-grey.

*Nestling.* Covered with black down.

*Obs.* Judging from the series of specimens I have examined, there appears to be no difference between the summer and winter dress, except that in the late summer the plumage is rather worn and pale. I find a considerable variation in the size of the bill, some of the specimens I have examined having the bill only 1·4 inch in length, whereas others have it as long as 1·8. As a rule, it appears that the female has a shorter bill than the male; but this does not seem to be always the case. The young bird has the iris brown; and it gradually assumes a rich orange-red colour as the bird approaches maturity.

The Water-Rail has a somewhat wider distribution to the eastward than the Land-Rail, being found far into India; but in Africa it appears to range only into the northern portions of the continent, being replaced in South Africa by *Rallus cærulescens*; and, though generally distributed throughout Europe, it does not range so far north as *Crex pratensis*.

In Great Britain it is found at all seasons of the year, and is very generally distributed throughout the whole of the United Kingdom. Mr. A. G. More states that it breeds throughout the mainland; and it is found also in almost all suitable localities during the winter. In Norfolk, Mr. Stevenson says (B. of Norf. ii. p. 404), it is "both a resident and migrant, those which remain with us throughout the winter receiving considerable accessions to their numbers in March and April; and though a large portion of those which have bred in our marshes pass southward again at the close of the breeding-season, migratory flights from the north are met with at intervals in autumn and winter. In support of this view of the habits of a bird not easy of observation at any season, I may state that between the middle of March and the first or second week in April, it is customary to find several couples of Rails in the Norwich market, hanging for sale with the Snipes that simultaneously make their appearance in our marshes. From that time until the close of the breeding-season they are pretty generally dispersed over the country wherever moist localities afford sufficient harbour; and though, of course, more abundant on the broads themselves, are known either by their cries or the chance discovery of their eggs and young, to frequent the margins of our inland meres, wet commons, and even rough sedgy watercourses." Hancock (B. of North. and Durh. p. 124) says that in Northumberland and Durham it is "not uncommon, though rarely seen, on account of its retiring habits. It is a resident, but to a considerable extent is migratory, and is most numerous during autumn and winter. Its nest has occurred in the district, and was taken by Mr. C. M. Adamson, on the 12th of July 1867, at Grindon Lough; it was built amidst reeds, about knee-deep in water, and contained seven eggs." Mr. Robert Gray writes (B. of W. of Scotl. p. 334) of the present species, "is commonly distributed over the whole of Scotland, including the Outer Hebrides and the Orkney and Shetland

Islands. I have obtained specimens from the counties of Argyle, Ayr, Inverness, Perth, Moray, Banff, Aberdeen, Forfar, Fife, East Lothian, Berwick, and Wigton; also from the islands of Harris, North Uist, Lewis (where it is plentiful), Skye, Mull, and Iona. It is also met with in Ross and Sutherlandshires. In some of the midland and eastern counties it appears to be resident all the year; and the same, indeed, may be said of it in some of the inner islands, where from the vegetation or brushwood near its haunts, it is often, when frozen out, seen running about in a half-bewildered state seeking protection. At such times it may easily be captured, as it seems reluctant to take flight for its own safety, even when pursued." Dr. Saxby, in his notes on the ornithology of the Shetland Isles, writes, under date 31st March 1864:—During the preceding winter "Water-Rails were to be seen in many parts of these islands. Upon the whole, they may be considered rather scarce here; but they have been more frequently met with this year than previously. As soon as the frost sets in, they visit enclosed grounds, sometimes venturing into corn-yards, and even to our very doors; but I never find corn in their stomachs, even in the most severe winter." Baikie and Heddle state also that it occurs in Orkney at all seasons of the year.

In Ireland it is common and generally distributed, being, Thompson says, permanently resident throughout the island, though little known except in winter. It has not occurred in Greenland; but Professor Newton writes, it is "rare in Iceland, though apparently a resident there. Faber obtained one in the north on the 23rd December 1819. Dr. Krüper says he saw two of its eggs in a collection at Reykjavik in 1856; and these were probably the specimens which were obtained two years after by Mr. Wolley and myself, and are now in my possession. M. Benguerel seems to have met with the bird, concerning which wonderful stories are told by the Icelanders."

Mr. H. C. von Müller states that it is an annual visitant to the Færoes. It is tolerably common in Scandinavia: in Norway, Mr. Collett says, it breeds regularly in the coastal districts, at least as far north as the Trondhjemsfiord, and is seen somewhat rarely also in the winter; and in a note lately received, he adds that in the districts near Trondhjem alone this sporadic species is met with regularly every year, and several were shot there in the autumn of 1875. Some years this species occurs not unfrequently along the south-west coast. Near Bergen, for instance, it was abundant even in 1869, and several individuals were shot in the course of the winter. Indeed, this bird is observed as often in winter as in summer, which arises from its shy habits. According to Professor Nilsson it is, generally speaking, somewhat rare in Sweden, and, as a rule, is only a summer visitant, a few remaining over the winter both in Skåne and near Gothenburg. It is, he adds, said to be common in Dalecarlia. It has only once been known with certainty to occur in Finland, the bird in question being one which was caught alive, half-starved, at Helsingfors, on the 19th April 1844.

In Russia its range is, Mr. Sabanäeff says, but imperfectly defined. It is rare in the Jaroslaf Government, and is only seen in the Moscow Government on passage; but it breeds in the Voronege and Orloff Governments. According to Mr. Taczanowski it is common in Poland in the summer, arriving about the middle of March and leaving late in October. A few stragglers remain over winter.

Borggreve says that it occurs regularly on passage in the marshy districts of North Germany,

and winters here and there; but he doubts many of the statements as to its remaining there to breed. He adds, it is said to breed in Silesia, Anhalt, Mecklenburg, Oldenburg, Münsterland, and near Cöslin in Pomerania. Referring to this, Mr. Hermann Schalow writes (J. f. O. 1876, p. 16) as follows:—"The Water-Rail is tolerably numerous throughout Mark Brandenburg, but, owing to its secretive habits, is often overlooked. Borggreve says that he did not observe it at Oderbruch before October, and further states that it is uncertain whether it breeds in North Germany. Zander having shown that it breeds in Mecklenburg, E. von Homeyer in Pomerania, A. von Homeyer and Tobias in Silesia, and Blasius in Brunswick, we can testify that it does so also in Mark Brandenburg. In a letter to me, Altum states that it breeds near Neustadt; and I have myself observed it during the breeding-season near Königs-Wusterhausen, Nauen, Havelberg, and other localities in that district. As a migrant it is seen late in March and in October. In Denmark it is most numerous during passage in April and October; but a few remain over winter in mild seasons. It breeds but rarely there; but several instances of its nest and eggs having been found are cited by Mr. Collin. According to Mr. Cordeaux a few occur in Heligoland in March and April, and again in September, October, and November, and occasionally later. Probably not more than a score, Mr. Gätke informed him, could be captured in any one year on the island. Baron von Droste Hülshoff says that from the middle or second half of October throughout the winter until the middle of May it is met with as a straggler on the island of Borkum; and Mr. van Wickevoort-Crommelin writes in his 'Notes sur les Râles des Pays-Bas:'—"It is neither rare nor common in the Netherlands; and its nest has been found only in few localities, more often on the lake of Kralingen, near Rotterdam, and in Groningen. On passage it is much more numerous, and occurs in October and November in localities which it does not inhabit in the summer, such as the humid bush-covered places along the maritime dunes of Holland, where a few remain all the winter. During mild seasons I have frequently seen it in December and January, and received one killed on the 15th of February last in the Bloemendaal swamp at the foot of the dunes not far from Harlem." It is found in Belgium and France during the summer season, and occurs there also more or less regularly during the winter. In Portugal it is stated to be common; and Colonel Irby says (Orn. Str. Gibr. p. 144):—"The Water-Rail is very common in all suitable localities on the Spanish side; and their croaking, frog-like call is always to be heard in the swampy jungle at Casa Vieja. Being to a great extent a migratory bird, it is most common in winter; but, owing to the cover being more thin, at that season all the Rails and Crakes are easier to obtain." In Italy, Sicily, and Sardinia it is resident; and in Corsica it is also found, on both sides of the island, but, Mr. C. Bygrave Wharton says, is not numerous. Mr. C. A. Wright states (Ibis, 1864, p. 149) that it occurs in Malta in spring and autumn, and, to some extent, in the winter, but is not very common; and Lord Lilford writes that it is very common and, he believes, resident in Epirus. Dr. Krüper says that it is common in Greece in the autumn and winter, but its nest has not been found there, as the marshes are too unhealthy to be explored in the summer. In Southern Germany it is resident and tolerably common in almost all suitable localities. Dr. Fritsch says (J. f. O. 1871, p. 380), it "arrives in Bohemia in May, inhabits the marshes, and breeds on the edges of ponds which are overgrown with rushy grass. It remains with us till late in the autumn; and H. Lokaj received examples even in the middle of winter." It is common in Austria; and Messrs. Danford and Harvie-Brown say the same as

regards Transylvania, where, Herr Csáto states, it is migratory in the Strell valley. It occurs in Turkey and Southern Russia, is common in winter and probably breeds in Asia Minor, and, Canon Tristram says, is permanently resident in Palestine.

In North Africa it is found in the winter. Captain Shelley states (B. of Egypt, p. 273):—"This species is a winter visitant, and is plentiful in Lower Egypt and the Fayoom, where I have frequently killed it, but has not been met with, to my knowledge, in Nubia. It frequents the sedgy districts, and when disturbed only flies a short distance to the nearest patch of thick covert." Von Heuglin says that, according to his experience, it is one of the rarer winter visitants to Egypt, and he never observed it south of the Nile delta; but Lefèvre states that it occurs near Adowa, in Abyssinia. It is resident in Algeria, and breeds commonly in the marshes of Zana and Djendeli. Canon Tristram met with it in the Sahara, at Laghouat; and Favier says that it occurs on passage near Tangier, frequenting the edges of rivers and swamps, where they conceal themselves in the sedges. Mr. Godman did not meet with it in the Azores, and says that he possesses a skin of the present species which was taken in lat. 46° 48′ N., long. 11° 30′ W., by the late Mr. W. Osburn when on his voyage to Jamaica in October 1867. It does not appear to occur at all in South Africa, being there replaced by *Rallus cærulescens*, Gm.

To the eastward the Water-Rail occurs at least as far as India and China; but in Japan it is replaced by an allied, though, as it appears to me, a fairly distinct species, *Rallus japonicus*, Schlegel—which differs in having the dark mark through the eye more clearly defined; and the barring on the abdomen extends quite to the end of the under tail-coverts, there being no buffy red and no white patch as in *Rallus aquaticus*. In the young bird the under tail-coverts and crissum are slightly tipped with rufous buff. I have examined several examples in the collection of the Marquis of Tweeddale, from Japan, and one in my own, all of which are easily distinguishable from *Rallus aquaticus*.

The common Water-Rail is said by Dr. Severtzoff to be both resident and migratory in Turkestan; and in Persia, Mr. Blanford writes (E. Persia, ii. p. 288), it is "probably not rare in the higher marshes; but I do not know if it breeds there. Judging from one of the specimens, which is scarcely full-grown, I should think it did. The specimens were collected by Major St. John. Ménétriés found it in the marshes between Salián and Lankorán."

I have not been able to examine a specimen of the so-called *Rallus indicus*, but agree with Dr. Jerdon that it is probably identical with the European bird. According to Blyth the Indian bird differs in being larger, with a conspicuously thicker bill and legs; and he also mentions the dark streak below the eye, and the less-pure hue of the lower parts, as distinctive characters. It is certainly not the same as *Rallus japonicus*; for Jerdon especially states that it has the lower abdomen reddish brown, as in the European bird, which is not the case with *Rallus japonicus*. Dr. Jerdon says (B. of India, ii. p. 727):—"It appears to be rather a rare bird in Central and Southern India, and has chiefly been found during the cold season, being probably migratory like some of the other Rails. It frequents marshy ground, generally in rather thick covert. I have only seen it myself in Northern India; and Adams states that it is common in the Punjab." In China, according to Swinhoe, it is found in Tientsin; and Messrs. David and Oustalet state that it is not unfrequently captured near Pekin. From the description given by the latter authors (Ois. de la Chine, p. 489) it appears certain that the Water-Rail found in China is our

European bird, and not *Rallus japonicus*. It does not appear to have been observed by Von Middendorff or Von Schrenck; but Dr. Radde obtained one through Mr. Maack from the mouth of the Ussuri in 1860.

In habits the present species differs greatly from the Land-Rail, and much more closely resembles the Aquatic Crakes; for it is a frequenter of wet, swampy localities where there is plenty of cover, frequently in the vicinity of woods, or in marshy places surrounded by trees, in wet, over-grown ditches, but seldom on open sheets of water, and never in dry localities or in open places, except by accident. Like the Spotted Crake and its allies it is a very shy, unobtrusive bird, shunning observation as much as possible, and always keeping to the dense vegetable growth in the marshy localities it frequents. It swims with ease and grace, and hence never shuns the deep water where it cannot wade. When on the water it resembles the Water-Hen; for it elevates its tail and jerks its head as it paddles along. Sometimes when closely pursued it will even seek safety by diving; but this probably but seldom occurs. Its flight is laboured and heavy, and it seldom flies far, but rises and flaps along as if with difficulty, with its long legs hanging down, and soon seeks shelter again amongst the reeds and aquatic herbage. Naumann states that it will occasionally perch on a low bough of a tree; but I have never personally seen it do this. It has a rather loud, clear cry, resembling the syllable *creek*, which it seems to utter when on the wing, especially during the season of passage; and, besides this, the bird often calls his mate with a sharp whistle resembling the sound produced by drawing a switch quickly through the air.

The Water-Rail is a very unsociable bird, and is seldom found otherwise than singly or in pairs, even on passage. It feeds on worms and small aquatic insects of various kinds, and especially on small snails, only when compelled by hunger resorting to vegetable diet. In a specimen obtained in Norway on the 13th of October 1875, Mr. Collett found numbers of small insects, chiefly coleoptera, amongst which were a small species of *Hyphydrus*, a large larva, several small *Phryganea*-larvæ, several *Araneæ*, some coarse gravel, and a few seeds of an aquatic plant.

It breeds in damp, swampy localities, and conceals its nest with great care. This latter, which resembles that of the small Crakes, is placed above the water or marsh, and is constructed on the bent leaves or stems of sedge or rushes, but seldom resting on the ground itself. It is a loosely made structure formed of dried leaves of aquatic plants, tolerably large, and contains eight or ten, and sometimes even more eggs; and the young birds are able to leave the nest soon after they are hatched, and, like those of the Land-Rail, are very expert in hiding when disturbed and danger threatens. Colonel Irby, who has taken the eggs of the Water-Rail in Spain, writes (*l. c.*):—"They build in rushes or sedges, laying about the 20th of April. On the 13th of May we found two nests, from each of which Mr. Stark succeeded in snaring one of the old birds; these nests, built entirely of dry sedge and lined with a few bits of dry grass, were just raised above the water, and measured 6 inches in height, depth, and diameter; the hollow of the nest was $4\frac{1}{2}$ inches across by $2\frac{1}{2}$ deep. Each nest contained seven eggs much incubated—one lot being of the usual type, the other resembling more those of the Spotted Crake, or, rather, looking like miniature Water-Hen's eggs with larger blotches than usual."

Eggs of the Water-Rail in my collection are pale whitish stone-buff in ground-colour,

sparingly marked with pale purplish shell-spots and dark red surface-spots and blotches, and measure from $1\frac{15}{40}$ by $1\frac{1}{40}$ to $1\frac{16}{40}$ by $1\frac{2}{40}$ inch.

The specimens figured are an adult bird and a young bird in down, both being the examples above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀ *ad.* Rye, Sussex, September 26th, 1860 (*H. E. D.*). *b*, ♀. Hampstead, April 2nd, 1870. *c*, ♂. Hampstead, January 1871. *d*, ♀. Hampstead, December 6th, 1871 (*Davy*). *e*, ♂. Stockholm, July 27th, 1874 (*Meves*). *f*, ♂. Near Copenhagen, February 5th, 1870 (*Benzon*). *g*, ♂. Ajaccio, Corsica, March 23rd, 1875 (*C. B. Wharton*). *h*, ♂. Butrinto, Albania, November 8th, 1871. *i*. Albania, November 1871 (*Hanbury Barclay*). *k*. Cairo, Egypt (*G. E. Shelley*).

*E Mus. Lord Tweeddale.*

*a*, *b*, ♂. Cookham, Berks (*Briggs*). *c*. Morocco (*Olcese*). *d*, ♂. Guiken, Asia Minor, November 17th (*Robson*).

*E Mus. Brit. Reg.*

*a*, ♀. Monmouth, December 4th, 1873 (*Morgan*). *b*. Turkey, September 17th. *c*, ♂. Buyukdere, Turkey, January 21st (*Robson*). *d*. Shiraz, Persia (*Blanford*).

## Genus PORZANA.

*Rallus* apud Brisson, Orn. v. p. 155 (1760).
*Gallinula* apud Latham, Ind. Orn. ii. p. 772 (1790).
*Porzana*, Vieillot, Analyse, p. 61 (1816).
*Ortygometra* apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 34 (1816).
*Zapornia* apud Leach, ut suprà (1816).
*Octogometra* apud Forster, Syn. Cat. Brit. B. p. 27 (1817).
*Zaporina* apud Forster, op. cit. p. 59 (1817).
*Crex* apud Lichtenstein, Verz. Doubl. p. 80 (1823).
*Phalaridion* apud Kaup, Natürl. Syst. p. 173 (1829).
*Phalaridium* apud Meves, Journ. für Orn. 1875, p. 433.

This genus is represented in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, three species being found as residents in the Western Palæarctic Region.

They frequent damp, swampy localities similar to those where the Water-Rails are to be met with, and resemble those birds much in their general habits. They are extremely secretive, and are hard to drive out of the dense reed-thickets where they usually live, and through which they run and slip with ease. They swim with facility, and sit lightly and gracefully on the water. They feed on aquatic insects, snails, worms, &c., and to some extent also on vegetable matter, and usually obtain their food in shallow water, or on the edges of ditches, or in muddy, damp localities. They make a bulky, carelessly built nest of dried reeds and aquatic herbage, and deposit several dark ochreous or olivaceous-ochreous eggs, spotted and marked with dark rufous or dull dark brown.

An American species (*Porzana carolina*) has been included in the British list on the strength of an occurrence said to have taken place near Newbury, Berks, in October 1864; but it certainly appears to me premature to admit it on such slight grounds.

*Porzana maruetta*, the type of the genus, has the bill rather shorter than the head, higher than broad at the base, tapering, compressed, the tip acute; nasal groove long, the nostrils linear, oblong, median; wings rather short, broad, concave, the first quill shorter than the fifth, the second longest; tail short, rounded, the feathers soft and weak; lower part of the tibia bare; tarsus rather long, scutellate; toes very long and slender; claws long, slender, curved, tapering, acute.



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F.Neale, lith.

SPOTTED CRAKE.
PORZANA MARUETTA.

# PORZANA MARUETTA.

(SPOTTED CRAKE.)

*Rallus aquaticus minor sive maruetta*, Briss. Orn. v. p. 155 (1760).
*Rallus porzana*, Linn. Syst. Nat. i. p. 262 (1766, ex Briss.).
?*Rallus fulicula*, Scop. Ann. i. Hist. Nat. p. 108. no. 158 (1769).
*La Marouette*, Buff. Hist. Nat. Ois. viii. p. 157 (1781).
*Gallinula porzana* (L.), Lath. Ind. Orn. ii. p. 772 (1790).
*Porzana*, Vieill. (*La Marouette*, Buff.) Analyse, p. 61 (1816).
*Ortygometra maruetta*, Leach, Syst. Cat. B. & M. Brit. Mus. p. 34 (1816).
*Octogometra maruetta* (Leach), T. Forst. Synopt. Cat. Brit. B. p. 27 (1817).
*Crex porzana* (L.), Licht. Verz. Doubl. p. 80 (1823).
*Ortygometra porzana* (L.), Steph. in Shaw's Gen. Zool. xii. pt. i. p. 233 (1824).
*Gallinula maculata*, C. L. Brehm, Vög. Deutschl. p. 698 (1831).
*Gallinula punctata*, C. L. Brehm, Vög. Deutschl. p. 699 (1831).
*Zapornia porzana* (L.), Gould, B. of Eur. pl. 343 (1838).
*Porzana maruetta* (Leach), Bp. Cat. Metod. Ucc. Eur. p. 64 (1842).
*Ortygometra arabica*, Licht. Nomencl. Av. p. 96 (1854).
*Gallinula leucothorax*, C. L. Brehm, Vogelfang, p. 329 (1855).
?*Gallinula gracilis*, C. L. Brehm, Vogelfang, p. 329 (1855).
"*Zapornia marmorata*, Leach" (ubi?) fide Heugl. Orn. N.O.-Afr. p. 1242 (1873).

*Poule d'eau-marouette*, French; *Franga de agua*, *Rabiscoelha*, Portuguese; *Polluela*, Spanish; *Voltolino*, Italian; *Gallotz-sekond*, Maltese; *gesprenkeltes Sumpfhuhn*, *punktirtes Rohrhuhn*, German; *de Porceleinhoentje*, Dutch; *plettet Sumphöne*, *Rörvagtel*, Danish; *smaaplettet Sumphöne*, Norwegian; *småfläckig Sumphöna*, Swedish; *Kaisla-rääkkä*, Finnish; *Kamyschnik*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 751; Werner, Atlas, *Gralles*, pl. 35; Kjærb. Orn. Dan. taf. 38; Frisch, Vög. Deutschl. taf. 237; Fritsch, Vög. Eur. taf. 32. fig. 1; Naumann, Vög. Deutschl. taf. 237; Sundevall, Svensk. Fogl. pl. 45. fig. 3; Gould, B. of Eur. pl. 343; id. B. of G. Brit. iv. pl. 88; Schlegel, Vog. Nederl. pl. 354; Bettoni, Ucc. Lomb. pl. 83.

♂ *ad.* fronte, pileo et capitis lateribus, mento et gulâ saturatè schistaceo-cinereis: loris et plumis ad basin rostri ferè nigris: pileo centraliter nigro et rufescente fusco notato: nuchâ, collo postico et corpore suprà rufescenti-olivaceo-fuscis, illis albo punctatis, hôc eodem colore striato et nigro notato: remigibus et rectricibus olivaceo-fuscis, remige extimo angustè albo marginato: gulâ, gutture et corpore subtùs schistaceo-cinereis, illis albo punctatis: abdomine centraliter ferè albo: hypochondriis

albo fasciatis et notatis: subcaudalibus ochraceo-cervinis: rostro aurantiaco-flavo, ad basin rubro: iride fuscâ: pedibus luteo-viridibus.

♀ *ad.* mari similis sed minor et sordidior, minus albo notata, abdomine magis albo, et hypochondriis fusco lavatis.

*Adult Male* (Rotterdam). Forehead, crown, sides of the face, chin, and upper throat deep blackish slate-grey, the throat and head in front of the eye unspotted; crown closely marked with black and dark reddish brown; lores and feathers at the base of the bill nearly black; nape, hind neck, and upper parts generally dark reddish brown with an olivaceous tinge, on the neck closely dotted with white, and on the rest of the upper parts marked with short stripes and spots of white and tolerably regularly blotched with black; quills and tail dark olivaceous brown, the first primary externally narrowly margined with white; underparts deep slate-grey, the centre of the abdomen nearly white, the breast spotted, and the flanks spotted and barred, with white; under tail-coverts warm ochreous buff; bill orange-yellow, except at the base, where it is red; iris dark reddish brown; legs green with a yellowish tinge, the joints tinged with lead-blue. Total length about 8·5 inches, culmen 0·85, wing 4·8, tail 2·2, tarsus 1·45, middle toe with claw 1·7.

*Adult Female* (Corsica, 27th March). Resembles the male, but is rather smaller, is less marked with white, and duller in colour, the slate-blue coloration on the head and neck is more tinged with brown, the flanks are tinged with brown, and there is more white on the abdomen.

*Young Male* (Turkey, 14th September). Resembles the female, but is still duller in colour, the head is spotted to the base of the bill, the chin is nearly white, the rump is much darker, nearly black, and there is rather more white on the underparts.

*Young in down.* Covered with glossy jet-black down; inner portion of both mandibles blue-grey, in front of which a small black band crosses over the nostrils; tip of the maxillæ pure white, bordered by a black spot; tip of the lower mandible black.

The Spotted Crake inhabits Europe generally during the breeding-season, ranging further north in the eastern than in the western part. In the autumn it migrates southward, and is found commonly in winter in North Africa; and in Asia it is met with as far east as Eastern Siberia. According to Yarrell (Brit. B. iii. p. 113) "it is more frequent in England in the maritime counties than in others; and its appearance has been recorded in Cornwall, Devonshire, Dorsetshire, Hampshire, and, in fact, all round the southern and up the eastern coast as high as Durham and Northumberland." Mr. Mansel-Pleydell says that it is a summer visitant to Dorsetshire, remaining from March to September. One was shot, he says, near Wareham in September 1868, another at Weymouth on the 5th November 1852; one was taken alive in a garden at Radipole, and was sent to the Zoological Gardens, Regent's Park, on the 27th October 1866, by Mr. Thompson, whose son also shot one at Lodmoor, Weymouth, on the 28th September 1872. Mr. Stevenson, referring to the occurrence of this species in Norfolk, writes (B. of Norf. p. 393) as follows:—"The Spotted, like the Corn-Crake, visits us regularly in spring, and, though chiefly confined to the 'Broad' and 'Fen' districts, is by no means uncommon between the months of March and October. Considering the almost impenetrable swamps the Crakes frequent in summer, the fact of their nests being but seldom found is of course no proof of their

scarcity; and in like manner, owing to the extreme difficulty with which they are flushed, even on the mown marshes in autumn, the few examples killed yearly by the Snipe-shooter at that season are, I consider, an evidence of many passing wholly unnoticed.

"Mr. Lubbock speaks of the spring arrivals of this species as occurring with great regularity between the 12th and 20th of March; but of late years I have no record of their appearance earlier than the 21st of that month; and a female killed on the 23rd of March, 1866, at Ludham, was then forward in egg. During the first week in May, as recorded by Mr. W. R. Fisher in the 'Zoologist' of 1843 (p. 248), the eggs of the Spotted Crake have been taken in the neighbourhood of Yarmouth; and I have had fresh eggs from Hickling on the 26th of that month, and have seen the young, in their black down, taken on Rockland Broad in the last week of July. With reference to its breeding in Norfolk, Messrs. Sheppard and Whitear remark, 'We have seen a considerable number of its eggs at Yarmouth, which, as well as its young, were found in the neighbourhood of that place—and are also in possession of an egg taken from a female of this species, which was killed in the marshes below Norwich.' It seems probable, however, that they were formerly more abundant in this county than they are now, as Mr. Rising informs me he has killed seven or eight in a day at Horsey, where they are comparatively scarce at the present time. A few years back a nest of this Crake was found by Mr. A. Hammond, jun., on the margin of a reed-bed on Walton Common, near Westacre; and the small chain of fens on the river Thet, in the south-western part of the county, is also frequented by this species.

"On two or three occasions I have shot this Crake when looking for Snipe at Surlingham, where both young and old, before their departure in October, frequent the rough marshes surrounding the reed-beds; but in these localities even a dog well accustomed to the spot will sometimes be baffled altogether by the quickness with which the bird threads its way amongst the tangled grass, or slips round the little tussocks. When too closely pressed, also, and compelled to take wing, it not unfrequently flies so low, in a line with the dog, that it pitches again before a safe shot can be had; and then most probably it drops amongst the reeds, and is seen no more. On the 4th of September, 1861, four were shot at Stalham on the same day; but I find from my notes for the last twenty years that the majority of the specimens brought to our bird-stuffers for preservation have been killed between the 2nd and 29th of October. On the 22nd of October, 1856, one old bird and three young of the year were shot at Rockland. About that time, I believe, the greater number take their departure for the south; but stragglers are occasionally met with throughout November, of which I have records in different seasons on the 2nd, 9th, 16th, and 30th. I have also been assured by the marshmen that this Crake may be found at times in midwinter; but one shown me in the flesh on the 2nd of December, 1868, is the latest I have ever known. As the birds observed thus late in the year are almost invariably in immature plumage, they are most probably the result of a late hatch, and therefore unable to join the earlier migrants." Mr. Cordeaux says (B. of Humb. Distr. p. 143) that it is "very locally distributed, but by no means uncommon in certain localities, and on each side of the Humber. In Lincolnshire it is yet tolerably numerous near Ashby, in the wild district near the Trent; also in the neighbourhood of Tetney, near Grimsby." Further north I find it recorded from Northumberland and Durham by Hancock (B. of North. and Durh. p. 125) as "a resident, and to some extent migratory. It occasionally breeds in the district. A nest of eggs was taken at

Prestwick Car, many years ago, by the gamekeeper of the late Sir Matthew White Ridley, Bart. A few years ago another nest of young, just hatched, was taken at the same place by Mr. Turner, of Prestwick. And, according to Mr. W. Proctor, it bred some years ago at Framwellgate Car, Durham."

In Scotland this Crake becomes rarer, and, though it doubtless must breed there in many localities, its nest has not often been taken. Mr. Robert Gray (B. of W. of Scotl. p. 333) says of it:—"a very uncommon species in the western counties; it is, however, more numerously distributed throughout the eastern counties, extending from Orkney to Berwickshire. In Aberdeenshire and Forfar, according to Macgillivray, it can scarcely be called very rare. 'In Scotland,' says Mr. More in 'The Ibis,' the nest has been found only in Perth, Aberdeen, and at Loch Spynie, in Elgin;' but, as the birds have been repeatedly taken in the breeding-season in Banffshire, Fife, East Lothian, and Berwick, it is not unreasonable to infer that the species nests in these counties also. In the west of Scotland the Spotted Crake has been taken in Wigtownshire, Ayrshire, and Renfrewshire; but I have no authentic instance to give of its occurrence north of the last-named district. In its habits this bird closely resembles its congener the Water-rail, and, like it, is not easily flushed from its haunts.

"Although a migratory species, the Spotted Crake appears to come early, specimens being occasionally taken about the beginning of April; as a rule, it also lingers much later than other migratory birds, stray examples having been shot in November, December, and even January; so that it is absent not more than two or three months. It may, indeed, be yet found to be, in some of the southern districts, permanently resident." It does not appear to have ever been met with in Shetland; but Messrs. Baikie and Heddle say (Nat. Hist. Ork. i. p. 69) that it is stated, in 'Anderson's Guide,' by the Rev. C. Clouston to have occurred in Orkney, though neither date nor locality are cited. It has, however, they add, been observed, though rarely, in Sanday.

In Ireland the Spotted Crake is less numerous than in England, and Thompson says that it "can only be announced with certainty as an occasional though probably a regular summer visitant" to that island. There are two instances of its occurrence in Greenland. One was, Professor Newton says, obtained at Godthaab on the 28th September 1841, and a second at Nenortalik in 1856. It has, however, not been recorded from either Iceland or the Færoe Islands; but it is found in Scandinavia, though chiefly in the southern districts. Mr. Robert Collett informs me that it breeds sparingly in the southern portions of Norway, as, for instance, on Romerike and the Hvalöer, possibly also in several other localities round the south coast, where individuals have been observed at Porsgrund, Lauervig, Fredrickstad, Nedernæs, Christiansand, and on Jæderen; and Professor Nilsson says that it is not so rare in Sweden as has been supposed, for it is not uncommon in Skåne, and he has also heard it near Gothenburg, where, Malmlen says, it is quite common. It occurs at least as far north as Upland, and probably up into Westerbotten. Dr. Palmén states that it is found in many parts of Southern Finland up to 63° N. lat., but is everywhere met with sparingly, chiefly breeding. It is occasionally seen in Uskela parish and Helsinge, and thirty years ago was common at Gloet, near Helsingfors; but drainage has driven it away. Dr. Palmén cites the following localities in which it has been met with, viz. Borgå, Pernå parish, Walkeala parish, Wiborg, Thusby träsk, Mäntsälä, Tavastland, Nyslott, Kexholm, Dworetz (in Russian Karelen), near Kuopio, Kaavi (in Northern

Karelen), and adds that Malmberg heard it in Tuusniemi and Nilsiä in 1871 and 1872, and M. von Wright heard its note on the 11th July at Haukipudas kapell, in 65° 10′ N. lat.

In Russia it appears to range further north than in Western Europe. Messrs. Alston and Harvie-Brown, who met with it near Archangel, write (Ibis, 1873, p. 67) as follows:—"The peculiar '*whuit, whuit*' of the Spotted Crake first attracted our attention as our canal-boat crept slowly through the great marshes between Wosnesenskoi and Wuitegra. We afterwards procured both old and young in down at Waldushki; and at many other localities this curious cry sounded in the still nights, and was taken up and replied to on every side. This must be a very abundant species, especially in the great marshes above mentioned." Mr. Meves obtained the eggs of this species at Archangel. Mr. Sabanäeff informs me that it is common throughout the interior of Russia. It is common in the St. Petersburg Government; and Mejakoff says that it is also found in Vologda. In the Ural, Sabanäeff only observed it in the southern portions of the Perm Government, on the eastern slope, and he does not believe that it has been seen higher than Ekaterinburg on the western side; Teplouhoff met with it in 58½° N. lat.

According to Mr. Taczanowski it is common throughout Poland, where it arrives early in April, and remains until the end of October. According to Naumann the Spotted Crake is found generally throughout Germany, but more especially in low swampy localities, where it is common. In Anhalt and the adjacent provinces it is the commonest of the Crakes, and much more numerous than the Water-Rail and the Water-Hen. It arrives about the middle of April, and commences its migration southward again late in August, a few stragglers remaining until the early part of October. Borggreve says that it occurs generally in the summer throughout North Germany, but is commoner in the eastern than in the western portions.

Mr. Collin writes (Skand. Fugl. p. 553) that this species breeds here and there not unfrequently in the Danish provinces, as, for instance, at Aarhus, several localities in Vendsyssel, as, for instance, Dronninglund and Gaardbo sö, at Thisted, Ribe, Gedsörgaard, Sorö and Herlufsholm, Helsingör, Moorsö and Schwentine, on the west coast of Schleswig, at Flensborg, Östrupgaard, and it is occasionally seen on Bornholm. According to Mr. Cordeaux (Ibis, 1875, p. 186), it occurs on Heligoland in May and September: not half a score are observed in a year; but three fourths of these are met with in May. In Holland it is common, arriving in April, remaining to breed, and leaving again in September and October; and Baron Fallon says that it is not rare in Belgium, where it is found in the marshes of Limbourg, in Campine, occasionally along the Meuse and on the edges of the large marshes, arriving and leaving about the same time as it does in Holland. Messrs. Degland and Gerbe state that it is not uncommon in France during the summer season, and is said by M. Bouteille to breed very numerously in the marshes of Saint-Laurent du Pont, near Grenoble. M. Adrien Lacroix says that it winters in the French Pyrenees, arriving late in August or early in September; a few breed rarely in Hérault, Tarn-et-Garonne, and the Pyrénées orientales, and it is to some extent resident in Aude. It is stated by Professor Barboza du Bocage to be common in Portugal; and in Spain it is, according to Mr. Howard Saunders, abundant in the winter. He adds that he has no proof of its remaining to breed. Colonel Irby, however, states that it is extremely abundant in Southern Spain, more so than the Water-Rail, and is most frequent in spring and autumn. "Many remain," he says, "during the winter months; and they occur also sometimes in the breeding-season; so, although

I did not actually obtain an identified nest, I have no doubt they are to be found breeding in the country." Von Homeyer met with it in the Balearic Isles; and, according to Count Salvadori, it is found on passage in Italy, and probably breeds there. It is common in Sicily during the winter, and is said to breed near Catania and Syracuse. Mr. C. Bygrave Wharton obtained it in Corsica in March and April; and Mr. C. A. Wright says (Ibis, 1864, p. 150) that it is pretty common in Malta, being most plentiful in March.

In Southern Germany it is tolerably common during the summer. Dr. Fritsch says that it is numerous, in suitable localities, in Bohemia from April to October, and especially so near Weisswasser; the late Mr. E. Seidensacher informed me that he used to meet with it near Cilli, in Styria, on the autumn passage; and Messrs. Danford and Harvie-Brown state (Ibis, 1875, p. 418) that it is common everywhere, and migratory, in Transylvania. It is found not uncommonly in Turkey, and, Dr. Krüper says, is a resident in Greece. The specimens in the Museum at Athens were killed in Attica on the 7th of March and 2nd of June. Resident and common in the Ionian Islands, Lord Lilford says it is more numerous in September and October than at any other time. It is found in Asia Minor, where Strickland met with it near Smyrna in winter; and Colonel Drummond-Hay says that it breeds commonly in Crete. Canon Tristram did not meet with it in Palestine, though he believes that it occurs there in suitable localities, and it is found in North Africa.

Von Heuglin says that it appears not uncommonly in September and October in Egypt, Nubia, and the coasts of the Red Sea, as also on the Blue and White Nile, where it winters. He observed a few in May in the Fayoom and Nile delta; and Rüppell states that it occurs in Abyssinia. Captain Shelley believes that it is resident in Lower Egypt, as one or two specimens may generally be met with. Mr. J. H. Gurney, jun., met with it at Laghouat, in Algeria; and Loche says that it is resident in that province. Mr. C. F. Tyrwhitt Drake obtained two at Martine in March; and Favier says (*fide* Colonel Irby, Orn. Str. Gibr. p. 143) that it is met with near Tangier during passage, but not in any great number. I do not find it recorded from Central or Southern Africa; probably it does not range below the northern portions of that continent; but, according to Berthelot, it has been obtained in the Canaries.

To the eastward the Spotted Crake is found at least as far as India; but it does not occur in China or Japan. Pallas certainly states that it is found in Eastern Siberia; for he writes (Zoogr. Rosso-As. ii. p. 155) as follows:—"In arundinetis Rossiæ et Siberiæ, præsertim australioribus, passim vivit." But later explorers do not appear to have met with it in Eastern Siberia. Mr. Blanford obtained one specimen in Persia; and De Filippi states that Doria found it common in spring at Veramin, south-east of Tehrân. According to Severtzoff it breeds rarely in Turkestan; and Mr. A. O. Hume says (Stray Feathers, i. p. 251) that one was shot in the Roree district (Sindh) by Dr. Day. He never happened to come across it again; but sportsmen to whom he showed the skin told him that it was not uncommonly met with in tamarisk thickets, in and on the edges of swamps, when beating for Snipe. According to Dr. Jerdon it is "found all over India in the cold season, and frequents marshes, rice-fields, and moist meadows near rivers and tanks;" and Dr. Henderson writes (Lah. to Yark. p. 293):—"A single specimen of this species was obtained at the Karatág lake, on the Karakoram, at an elevation of over 16,000 feet. This was on the 24th September, and the bird was probably on its way southwards; it could not

possibly have been any thing but a casual visitor, as the lake lay in perfectly bare shingle, and there was hardly a vestige of vegetation anywhere about. The bird was easily caught by the hand; and at the same time and place, as already mentioned, a common Quail was captured. This lake lies almost in the most direct route, as the crow flies, between Yārkand plains and Lé, and between the nearest points respectively of the Karakāsh and Shyok." It does not occur in the Nearctic Region. In closing my notes on the geographical distribution of this species I must not omit to refer to an excellent paper by M. van Wickevoort Crommelin, "Notes sur les Rales des Pays-Bas," in the 'Archives Néerlandaises,' t. viii., in which the distribution of the present species, as well as that of its allies, is most carefully and accurately worked out.

In habits the Spotted Crake, like its allies, is exceedingly secretive; and hence it is far more frequently heard than seen. It frequents swampy localities where aquatic herbage is abundant, and where it can find good shelter; and it is extremely difficult to force it to take wing when it is in the dense cover of the reeds, through which it creeps and glides with the greatest ease. When followed by a dog, it invariably seeks to escape by running and hiding; and it is only when hard pressed that it will take wing, to fly only a short distance, and again seek shelter amongst the reeds. On the wing it does not by any means appear to advantage; for it flies heavily, like a young bird that has not yet attained to the full use of its wings, and its legs hang down clumsily, unless it flies to some distance, when they are stretched out behind. It is by no means a shy bird, and, as a rule, is not afraid of man, unless it is much disturbed; and if one moves about quietly, and when in the vicinity of the bird remains quite still, it can often be watched without much difficulty. Its call-note is a clear loud *kweet*, which is seldom heard during the daytime, but most frequently in the evening or at night; and Naumann remarks that the note with which the sexes call each other is low, and seldom heard unless every thing else is quiet; and he likens it to a heavy drop falling from a height of several feet into a vessel of water. This bird feeds on aquatic insects and insect-larvæ, small worms and small snails, as well as tender shoots of water-herbage and grass-seeds, and usually seeks its food in shallow water or on moist and swampy ground, on the edge of ditches, &c. &c. It always selects a wet place for the purpose of nidification; and the nest is not unfrequently placed so that the bird can only reach it by swimming, which it can readily do; for it swims with grace and ease, jerking its head as it paddles along. The nest of the Spotted Crake, resembling that of the Water-Rail, is a careless, bulky structure of flags, dried reeds, and leaves of aquatic plants, lined with finer materials; and the eggs, from nine to twelve in number, are deposited in May or early in June. They are oval in shape, the surface of the shell being smooth and rather glossy. In ground-colour they are warm ochreous, or dull ochreous marked with fine dots, with violet-grey shell-markings and reddish brown spots and blotches, which are tolerably regularly scattered over the surface of the shell. In size those in my collection vary from $1\frac{11}{40}$ by $\frac{38}{40}$ to $1\frac{17}{40}$ by $\frac{39}{40}$ inch.

The nest is exceedingly difficult to find, being very carefully concealed amongst the reeds or long aquatic grass, and is placed either on the damp ground or on a platform of broken-down reeds in the water.

The specimens figured are the adult male and the young bird above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Rotterdam, 1858 (*H. E. D.*). *b*, ♂. Lake Bigulia, Corsica, March 17th, 1875 (*W. Jesse*). *c*, ♂, *d*, ♀. Ajaccio, Corsica, March 1875 (*C. B. Wharton*). *e*, ♀. Malta (*Whitely*). *f*, ♂ *juv.* Khathane, Turkey, September 14th, 1871 (*Robson*).



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Elwes del. lith. Hanhart imp.

BAILLONS CRAKE.
PORZANA BAILLONI

# PORZANA BAILLONI.

(BAILLON'S CRAKE.)

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?*Rallus pusillus*, Pall. Reis. Russ. Reichs, iii. Anh. p. 700. no. 30 (1776).
?*Rallus minutus*, Pall. Zoogr. Rosso-As. ii. p. 155 (1811).
*Rallus bailloni*, Vieill. Nouv. Dict. xxviii. p. 548 (1819).
*Gallinula baillonii* (Vieill.), Temm. Man. d'Orn. ii. p. 692 (1820).
*Gallinula stellaris*, Temm. Man. d'Orn. p. 693 (1820).
*Crex bailloni* (Vieill.), Licht. Verz. Doubl. p. 80 (1823).
*Ortygometra baillonii* (Vieill.), Steph. in Shaw's Gen. Zool. xii. p. 228 (1824).
*Gallinula pygmæa*, Naum. fide C. L. Brehm, Lehrb. Naturg. eur. Vög. ii. p. 641 (1824).
*Phalaridion*, Kaup (*Gallinula pusilla pygmæa*), Natürl. Syst. p. 173 (1829).
*Crex foljambei*, Eyton, Cat. Brit. B. p. 46 (1836, nec Mont.).
*Crex pygmaea*, Naum. Naturg. Vög. Deutschl. ix. p. 567 (1838).
*Ortygometra pygmæa* (Naum.), Keys. & Blas. Wirbelth. Eur. p. 68 (1840).
*Porzana pygmæa* (Naum.), Bp. Ucc. Eur. p. 64 (1842).
*Zaporina pygmæa* (Naum.), Bp. Cat. Parzud. p. 15 (1856).
*Porzana baillonii* (Vieill.), Degl. & Gerbe, Orn. Eur. ii. p. 258 (1867).

*Poule d'eau Baillon*, French; *Schiribilla grigiata*, Italian; *Zwerg-Sumpfhuhn*, German; *het kleinste Waterhoen*, Dutch.

*Figuræ notabiles.*

Werner, Atlas, *Gralles*, pl. 37; Fritsch, Vög. Eur. taf. 32. fig. 3; Naumann, Vög. Deutschl. taf. 239; Gould, B. of Eur. pl. 344; id. B. of G. Brit. iv. pl. 89; Schlegel, Vog. Nederl. pl. 255; Roux, Orn. Prov. pl. 332; Jardine & Selby, Ill. Orn. i. pl. 15.

♂ *ad.* pileo, nuchâ et collo postico saturatè fulvidis, olivaceo tinctis et nigricante notatis: corpore suprà saturatè olivaceo-fulvido, nigro notato: dorso, uropygio et tectricibus alarum albo guttatis: caudâ et remigibus saturatè fuscis, remige extimo in pogonio externo albo cervino marmorato: capitis lateribus, gulâ, gutture et corpore subtùs saturatè schistaceo-cæruleis: abdomine imo, hypochondriis et subcaudalibus nigris albo fasciatis: rostro ad basin pallidè viridi, versus apicem nigricanti-viridi: iride coccineâ: pedibus sordidè grisescenti-carneis.

♀ *ad.* mari similis, sed corpore suprà pallidiore et subtùs sordidiore.

*Juv.* corpore suprà sicut in adulto picturato sed sordidiore notato, nec subtùs schistaceo-cæruleo, sed capitis lateribus ochraceo-fuscis, mento et gulâ superiore albis: gutture, pectore et hypochondriis superioribus fuscescenti-ochraceis, abdomine centraliter albo, hypochondriis et subcaudalibus nigris albo fasciatis.

*Pull.* lanugine nigrâ indutus, rostro albo, pedibus rufescenti-albis.

*Adult Male* (Valencia, 19th March). Crown, nape, and hind neck dark reddish brown, with an olivaceous tinge, and marked with blackish; upper parts generally dark olivaceous reddish brown, marked with black, and clearly spotted on the back, rump, and wing-coverts with white; tail and quills dark brown, the first primary marked on the outer web with buffy white; sides of the head, throat, and underparts deep slate-blue; the lower abdomen, lower flanks, and under tail-coverts black, barred with white; under wing-coverts black, barred with white; bill sea-green at the base, becoming blackish green towards the tip; iris carmine-red; legs dirty greyish flesh. Total length about 7 inches, culmen 0·75, wing 3·5, tail 2·05, tarsus 1·1, middle toe with claw 1·45.

*Adult Female* (Valencia, May). Resembles the male; but the upper parts are rather lighter, and the underparts of a less pure blue.

*Young Female* (S.E. Ural). Differs from the adult in lacking all trace of blue; the sides of the head are warm ochreous brown, the chin and upper throat pure white; lower throat, breast, and upper flanks dull brownish ochreous; centre of the abdomen white; flanks and under tail-coverts black, barred with white; upper parts as in the adult, but scarcely so clearly marked.

*Nestling*. Covered with black down; bill white; feet reddish white.

The range of this, the least of our European Crakes, is very extensive; for it is found throughout Central and Southern Europe, ranging northward as far as Great Britain, extending eastward in Asia as far as China, and occurring in Africa as far south as the Cape colony.

In Great Britain it has occurred now and then; and it is very possible that some of the occurrences recorded as being of *Porzana parva* may really refer to the present species. Yarrell writes (Brit. B. iii. p. 121) as follows:—"One of the earliest notices of the occurrence of this bird with which I am acquainted is published in the second volume of the 'Zoological Journal,' p. 27, on the exhibition of a specimen at the Zoological Club of the Linnean Society, which belonged to Dr. Thackeray, the Provost of King's College, Cambridge, and which was caught upon some ice at Melbourne, about nine miles south of Cambridge, in January 1823. 'To this spot, originally fen land, the poor bird had resorted, in an inclement season, to obtain a meal, but, having wandered far from its native and more congenial latitude, was so exhausted by want of food, or the low temperature of the season, or the combined effects of both, as to allow itself to be taken alive by the hand.' In the third volume of the same journal, p. 493, G. T. Fox, Esq., of Durham, has recorded another specimen of this bird, which was killed within three miles of Derby, in November 1821." Mr. Sealy, in the 'Zoologist' for 1859 (p. 6329), gives an account of two nests of this Crake taken in Cambridgeshire; and it has also bred in Norfolk. Mr. Stevenson writes, respecting its occurrence in Norfolk (B. of Norf. ii. p. 401), as follows:—"Messrs. Gurney and Fisher describe this diminutive Rail as 'very rare, but less so than the Little Crake;' yet, to my surprise, I find the records of its occurrence far less frequent; and although a nest and eggs, presumed to belong to this species, have been recently discovered, for the first time, in Norfolk, I know of no instance in which it has been killed in this county during the last twenty years. Mr. Lubbock, in his 'Fauna,' states that, to his knowledge, 'it has been shot three times on Barton Fen, and appears far more rare than it really is, as it creeps and skulks about, and a dog, however sagacious, can scarcely compel it to fly.' The same author

also remarks in a communication to Yarrell, 'On the 2nd of April, 1833, a fenman of my acquaintance killed an adult male of this species upon a marsh at Dilham, in this county; it was late in autumn, and the bird was in immature plumage.' A specimen in Mr. J. H. Gurney's possession was thus recorded by him in the 'Annals of Natural History' for 1842, under the date of August 23rd:—'About ten days since I received a specimen of that rare bird the Baillon's Crake, killed near Yarmouth; it is a fine male.' Again, in October 1840, as Mr. Dowell informs me, he and a friend when Snipe-shooting at Shropham and on Buckenham Fen killed two of these Crakes in the day. One, unfortunately, was too much spoilt by the dog for preservation; the other he presented to the Rev. W. W. Poley, of Brandon, in whose possession it still remains. Although constantly shooting, however, in the same neighbourhood, over the small chain of fens which border on the river Thet, he never met with another specimen.

"The discovery of the supposed nest and eggs of this bird in Norfolk, in the summer of 1866, was first announced in the 'Zoologist' for that year (p. 389) by Mr. J. Overend, of Yarmouth, who, under date of July 9th, states, 'On the 9th of June a friend of mine in this town was fortunate enough to obtain in the market four eggs of Baillon's Crake; and on Saturday last (July 7th) another of my friends was so lucky as to get five eggs of the same species.' From further inquiries at the time, and communications received from Mr. R. Upcher, Mr. Crowfoot, and Mr. Frere, of Yarmouth, I was enabled to gather the following additional particulars. It appears that the four eggs mentioned by Mr. Overend as purchased on the 9th of June were taken on that day at Potter-Heigham, or rather on Heigham Sounds, near Hickling, by a labouring man, who sold them to a lad named John Smith, at Yarmouth, who had been in the habit of collecting eggs for Mr. Crowfoot. The former was of course ignorant as to what they were; but as soon as their rarity was known, it was elicited from the man who took them that he had seen the parent birds near the nest, which was placed in a parcel of reeds growing in water about a foot in depth. It was very small and loosely made, composed of dry rushes. A few days later Smith paid a visit to the spot with the hope of securing the nest, but found that the reeds had been cut and the nest spoiled; and no doubt the man who discovered it was employed in reed-cutting at the time. The five eggs procured on the 7th of July were also taken in the same locality; but of these, unfortunately, three were broken. What became of the nest I cannot say; but the two were most likely constructed by the same pair of birds." According to Sir William Jardine it has once occurred in Scotland, one having been shot on a moss near Locherbie; but Mr. Robert Gray remarks that this is probably the only instance of its occurrence north of the Tweed, except that mentioned by Mr. James Wilson, who states that Mr. Sinclair, of Wick, obtained one in Caithness-shire. It has been recorded by Hadfield from the Isle of Man; and a single example has been obtained in Ireland, in a bog at Clay Castle, near Youghal, on the 30th October 1845.

It has not been met with in Sweden, Norway, or Finland, and appears to be rare in Russia (for I do not find it included in any of the lists of birds met with there); but, according to Mr. Taczanowski, it is found in Poland, where it is much rarer than *Porzana maruetta*. It is found in Germany, but appears generally to be less numerous than *Porzana parva*. Borggreve gives no data respecting its range, as he believes it to be specifically identical with *Porzana*

*parva*; but Gloger records it (Schl. Wirbelth.-Fauna, p. 51) as occurring, though rarely, in Silesia; and Count Rödern found it breeding near Glogau. Naumann frequently met with it during the breeding-season in Anhalt, especially in the marshes between the Elbe and the Saale, except in dry seasons. It arrives in May and leaves probably in August, migrating always at night. He also adds that it is found in Franconia and Hessen, especially near the Main. It is not rare near Hanau, and is said to breed near Bischoffsheim and Enkheim. Landbeck records it from Württemberg, Kettner from Baden; and Brehm obtained it from near Ahlsdorf, in Saxony. Mr. van Wickevoort Crommelin, who has most carefully collected data respecting its range, says that it is very rare in Lorraine, where it has been killed near Nancy; it breeds near Nantes, and not unfrequently in the marshes of Picardy, near Abbeville, but less frequently in the département du Nord, where it remains from the end of April to August. It has been observed in April in Luxemburg, and is of accidental occurrence in Belgium; and it certainly breeds in Holland, where it cannot be very rare, as English collectors have obtained a tolerable number of eggs there. Mr. van Wickevoort Crommelin says that "a female was captured on her nest near Bois-le-Duc, in Brabant; another, killed in our country, is in the Leyden Museum; and I possess a young male which was sent to me from Zwartsluis, in Overijssel, on the 1st September, 1872. Sportsmen when Snipe-shooting frequently see this Crake in that province late in April; and it probably breeds there." In France the present species is said by Degland and Gerbe to occur generally throughout the country, breeding in the northern districts. It arrives in the south of France in March, and is most numerous on passage; but some pairs remain to breed there. Messrs. Jaubert and Barthélemy-Lapommeraye say, indeed, that it is common in several parts of the south of France during the breeding-season, as, for instance, in the marshes of St. Laurent, near Grenoble. Professor Barboza du Bocage says that it is common in Portugal. And it appears to be by no means uncommon in Spain; for I have received many specimens from there; Mr. Howard Saunders says that it is rather rarer than the Little Crake; Lord Lilford found it breeding near Seville; and Colonel Irby writes of it (Orn. Str. Gibr. p. 143), "Seldom obtained, owing to its skulking propensities. I found this prettily marked Crake very common when Snipe-shooting at Casa Vieja from October to February. We also obtained it at the Laguna de Janda in May. Many are resident, breeding at the end of April, when they make a small nest of sedges and grass placed at the edges of swamps, laying from five to seven olive-brown eggs spotted with darker brown."

Passing eastward, again, I find it recorded by Bailly (Orn. Sav. iv. p. 263) as common in the marshes of Savoy, where it arrives in April and leaves in September. It is rare in Switzerland during the breeding-season; but Salvadori states (Ucc. d'Ital. p. 331) that it breeds in Tuscany, Lombardy, and Venetia. Mr. C. A. Wright, who records its occurrence in Malta, says (Ibis, 1864, p. 150):—"This bird is probably commoner than it is generally considered to be, owing to its retiring habits and its being mistaken for *Rallus parvus*. The first that came under my notice was shot by Mr. J. Quintana, at the Marsa, on the 27th October 1860; and another was killed at the same place on the following day. Two others are in my possession, both obtained in March—one in 1861, and the other in 1862. I have seen three others in local collections. The most recent capture (March 19th, 1863) came into the possession of Captain Morgan, who skinned it."

In Southern Germany it is found here and there. Dr. Fritsch says (J. f. O. 1871, p. 381) that, according to Palliardi, it was obtained at Elbekostelec by Mr. Häring; but he himself has never met with it in Bohemia. It breeds, Althammer states, rarely in the Tyrol; Hanf records the occurrence of several specimens in May, August, and October, in the Furt marsh in Upper Styria; Natterer met with it near Trieste in April; and according to Naumann it inhabits Dalmatia. Baldamus states that it breeds regularly in Hungary; and Messrs. Danford and Harvie-Brown write (Ibis, 1875, p. 418) that it is rare in Transylvania, but has been found in the Strell valley and in various parts of the country. I never met with it on the Lower Danube; but it is a bird that might easily escape observation, and may occur there in many parts; for Gould says that it is common in the marshes of Bulgaria. I have, however, never received it in any of the collections from Turkey, where it doubtless may be looked for. Dr. Krüper states that it is seldom seen in Greece; but, according to Erhard, it is a resident in the Cyclades. It appears to have been overlooked by the Russian authors, but occurs in Southern Russia; for I received through Mr. Meves a specimen from the Southern Ural, and Colonel Irby states that he found it common in the Crimea in April.

I do not find any data respecting its occurrence in Asia Minor and Palestine; and it is of somewhat rare occurrence in North-east Africa, though it is met with down as far as South Africa. Captain Shelley did not meet with it in Egypt; but a brother of the late Mr. S. Stafford Allen, who is now resident at Alexandria, has sent me a specimen from there; and Von Heuglin says that he met with it at the north-east end of Birket el Qarn, in the Fayoom, where it was not rare early in May, and was seen in pairs. According to Vierthaler it is met with up the Nile to Chartum. It is to some extent resident in Algeria, being, however, more numerous during the seasons of passage. Mr. Salvin (Ibis, 1859, p. 361) saw it occasionally at Zana, and obtained one nest there; and Mr. J. H. Gurney, jun., procured one at Laghouat. Mr. C. F. Tyrwhitt-Drake states that it is rare in Tangier; and Favier only met with it once there, in 1857. According to Vernon Harcourt it is rare on passage in Madeira, and it occurs far south in Africa. Mr. Andersson (B. of Damara Land, p. 37) writes:—"This pretty species is an inhabitant of the few marshes existing in Damara Land. At Omanbondé, where it breeds, I found it plentiful; it is also common in the marshy districts about Lake Ngami, and on the rivers Teoughe and Okavango; and I likewise obtained a specimen in Ondonga. It frequents alike the rank vegetation of the stagnant pools and the more scantily sheltered rills, searching industriously for insects, worms, slugs, snails, &c. When surprised it takes wing more readily than most of its congeners, but flies only for a very short distance, and drops amongst the aquatic herbage at the first convenient spot, from whence, if needful, it prolongs its retreat by running. This Crake constructs its nest of pieces of stalks of reeds, rushes, and other vegetable substances. The eggs are six or seven in number, of a brownish buff or olive-brown colour, closely spotted with obscure markings of a darker hue, and are rather larger than the eggs of the Starling." Smith obtained it in South Africa; and Layard says that it is found in several places there: he obtained examples at Swellendam, on the borders of the Buffeljagts river. According to Mr. Gurney (Ibis, 1865, p. 273) it is "found in the vicinity of Maritzburg; it inhabits the swamps and rushy pools, creeping amongst the weeds and grass on the edges in search of food; when disturbed it flies but a few yards, and drops suddenly into the weeds almost before the

gun can be got to the shoulder, and is therefore not very easy to shoot; the early morning is the best time to look for these birds." According to Mr. Edward Newton it was obtained by Mr. Caldwell at Antananarivo, in Madagascar; and I have examples from that locality, which agree closely with European specimens.

In Asia the present species has a tolerably wide range. Dr. Severtzoff says that it is found on passage and breeds in Turkestan, and it winters in Persia. Mr. A. O. Hume writes (Stray Feathers, i. p. 251) as follows:—"I never once met with it in Sindh; but I have it from near Simla, up to a height of 4000 feet, from Etawah, Sirsa near Delhi, Raipoor, Dacca, and Tipperah, from none of which I have seen the Little Crake. In fact, until I went to Sindh, I never met with this latter bird in India; and Dr. Jerdon does not include it in the 'Birds of India.' Baillon's Crake breeds in the North-western Provinces at any rate, as Mr. Brooks and I took one nest, containing three eggs, in the Etawah district; and the Little Crake breeds, as the boatmen told me, regularly in Sindh." Dr. Jerdon says (B. of India, ii. p. 724) that it is commoner than *Porzana maruetta*, frequents similar places, and has a like geographical distribution. I have killed it in every part of the country, chiefly in the cold season; some pairs, however, may breed in this country, as I have killed it in Eastern Bengal in May. Messrs. Henderson and Hume write (Lahore to Yarkand, p. 293):—"A single specimen was obtained near Sháhidulla, in the plains of India. This species breeds with us in July and August in the plains of Upper India, and in June and July in Kashmir and the valleys in the lower ranges containing suitable rice-swamps or marshy pools. It is very common near Syree, below Simla. The full number of eggs is, I believe, eight, as we found the fragments of this number of shells round a nest that had hatched off; but six is the greatest number of eggs that I have ever obtained. The nest is made of rush and weed, completely concealed in water-grass, wild rush, and the like, and is usually very little above the water's edge." It was once obtained by Mr. Layard in Ceylon; and Mr. Davison states (Stray Feathers, ii. p. 301) that he shot a female at Port Mouat, in the Andamans. It occurs to the eastward to China and Japan. According to Dr. Dybowski the present species breeds in Dauria; and Radde obtained two old males—one late in May on the Tarei-nor, and the other in August near Kiirinsk, on the eastern slope of the Southern Apfelgebirge.

Père David says (Ois. de la Chine, p, 487) that he found it common in the eastern portions of the part of China he visited, and numbers breed in the marshes near Pekin; and Mr. Swinhoe obtained it in Amoy. According to Schlegel there are examples in the Leyden Museum from Japan and the Philippines.

In habits Baillon's Crake is said to resemble *Porzana maruetta* very closely, much more so than it does the Little Crake. It inhabits marshy localities, chiefly the small ponds on the edges of large marshes, swampy ditches, &c., and is much less frequently seen in open sheets of water than *Porzana parva*. Like its allies it lies hidden amongst the dense aquatic herbage which covers the places it inhabits, and it is consequently difficult of observation. It swims with ease and grace, frequently nodding its head and jerking its tail; and in case of need it dives readily. It walks with quick steps on the floating leaves of aquatic plants and grasses, and is easy, quick, and graceful in its movements, except on the wing; for its flight is weak, short, and laboured, the legs hanging clumsily down as it flaps along, and it drops down again into the

welcome shelter of the reeds after it has traversed a short distance. When pursued by a dog it seeks to hide amongst the dense herbage, and only takes wing as a last resource when pressed very close. During the daytime its voice is seldom or never heard, but only in the dusk of the evening or during clear nights, and most frequently when it is circling round at some height preparatory to taking a longer flight than usual. Its call-note is a low piping tone, closely resembling the note of the Little Crake, from which, however, it can be distinguished by a practised ear. Von Heuglin says (Orn. N.O.-Afr. p. 1236) that those he met with in North-east Africa "were frequenting shallow water, where the bottom was sandy; and they were generally seen not far from the shore, amongst numerous tamarisk bushes. During the daytime they were tolerably shy, and immediately we approached took refuge amongst the tangled mass of roots, and were loth to leave their hiding-place again; but at night and at daybreak they were livelier, and were seen playing about in the open water every now and again, uttering their low piping call-note. When swimming, and running over the floating plants, they bore great resemblance to the Spotted Crake." Von Heuglin adds that the food of this species consists of worms, spiders, flies, small mollusks, and larvæ of various kinds; and Naumann, who dissected several specimens, states that he found in their stomachs insects, insect-larvæ, small mollusks, and coarse sand grains, and very seldom vegetable matter. The larvæ of gnats seem, he says, to be the staple article of food with this species.

The nest of this Crake is placed on the ground in a swampy locality, and is exceedingly hard to find. It is usually carefully concealed in a bunch of sedge, the points of which are bent together so that a basket-shaped hollow is made in the centre, which is internally carefully lined with finer leaves of aquatic plants and dried grasses, and, though carelessly constructed, is by no means very loosely made. If the eggs are much incubated the female sits close, and only slips off when the intruder is quite close to the nest. The eggs, usually from seven to eight in number, are olivaceous ochreous in colour, so closely dotted and marbled with olivaceous brown that frequently but little of the ground-colour is visible; and some of them are much darker than others. In size those in my collection vary from $1\frac{1}{40}$ by $\frac{32}{40}$ to $1\frac{5}{40}$ by $\frac{33}{40}$ inch.

The specimens figured are the adult male and young female above described, and are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Valencia, Spain, March 19th, 1872. *b*, ♀. Valencia, May 1871. *c*, ♂. Catarroja, Valencia, March 18th, 1872. *d*, ♂. Catarroja, April 13th, 1872. *e*, ♂. Catarroja, April 11th, 1872 (*Martin*). *f*. Malta, March 30th, 1864 (*C. A. Wright*). *g*, ♀ *juv.* Karabolska, S.E. Ural, August 14th, 1872 (*Meves*). *h*. Alexandria, Egypt, December 21st, 1876 (*F. S. Allen*). *i*, ♂. Tangier (*Olcese*). *k*, *l*. Madagascar (*F. Plant*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀ *ad.*, *c*, ♂ *juv.* Malaga, July 29th, 1871 (*Rios*). *d*, ♀ *ad.* Catarroja, Valencia, March 28th, 1872 (*Martin*). *d*, ♂, *e*, ♀, *f*, ♀ *ad.*, *g*, ♀ *im.* Near Valencia, March 3rd to 21st, 1873 (*Martin*). *h*, *i*, ♀ *ad.*

Malaga, September 5th, 1873 (*Rios*). *j*, ♂, *k*, ♀. Cattaroja, March 19th and 25th, 1874 (*Martin*). *l*, ♀, *m*, ♂. Malaga, July 30th and September 25th, 1874 (*Rios*).

*E Mus. H. B. Tristram.*

*a*, ♀. Catarroja, Valencia, April 13th, 1872 (*Martin*). *b*, ♂. Algiers, April 10th, 1856 (*H. B. T.*). *c*. South Africa (*E. L. Layard*). *d*, ♂ *juv.* N.W. India, September 7th, 1867 (*W. E. Brooks*). *e*. Chusan, China, May 1862 (*R. Swinhoe*).



E Neale lith.

Hanhart imp

LITTLE CRAKE.
PORZANA PARVA

# PORZANA PARVA.

(LITTLE CRAKE.)

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*Rallus parvus*, Scop. Ann. i. Hist. Nat. p. 126 (1769).
*Rallus mixtus*, Lapeyr. Mamm. et Ois. de la Haute-Garonne, p. 38 (1799).
*Gallinula pusillus*, Bechst. Orn. Taschenb. ii. p. 340 (1803, nec Pall.).
*Gallinula pusilla*, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 484 (1809, nec Pall.).
*Gallinula minuta*, Mont. Orn. Dict. Suppl. fol. 9 (1813, nec Pall.).
*Gallinula foljambei*, Mont. Orn. Dict. Suppl. fol. BB (1813).
*Zapornia minuta*, Leach, Syst. Cat. Mamm. & B. Brit. Mus. p. 34 (1816, nec Pall.).
*Zaporina minuta*, Forst. Synop. Cat. of Brit. Birds, p. 59 (1817).
*Rallus peyrousei*, Vieill. Nouv. Dict. xxviii. p. 562 (1819).
*Crex pusilla*, Licht. Verz. Doubl. p. 80 (1823, nec Pall.).
*Ortygometra olivacea*, Steph. in Shaw's Gen. Zool. xii. pt. i. p. 226 (1824).
*Zapornia pusilla*, Steph. in Shaw's Gen. Zool. xii. p. i. p. 231 (1824, nec Pall.).
*Phasaridion*, Kaup (*Gallinula pusilla pygmæa*), Natürl. Syst. p. 173 (1829).
*Ortygometra pusilla*, Bp. Comp. List, p. 53 (1838, nec Pall.).
*Ortygometra minuta*, Keys. & Blas. Wirbelth. Eur. p. 68 (1840, nec Pall.).
*Porzana minuta*, Bp. Ucc. Eur. p. 65 (1842, nec Pall.).
*Phalaridium pusillum*, Meves, Journ. für Orn. 1875, p. 433, nec Pall.

*Poule d'eau poussin*, French; *Schiribilla*, Italian; *Gallotz-terz*, Maltese; *kleines Sumpfhuhn*, *Sumpfschnerz*, German; *Dværg-Sumphöne*, Danish; *Lilla Sumphöna*, Swedish.

*Figuræ notabiles.*

Werner, Atlas, *Gralles*, pl. 36; Kjærb. Orn. Dan. taf. 38, and Suppl. pl. 18; Fritsch, Vög. Eur. taf. 32. figs. 4, 5; Naumann, Vög. Deutschl. taf. 238; Sundevall, Svensk. Fogl. pl. 76. fig. 5; Gould, B. of Eur. pl. 345; Roux, Orn. Prov. pl. 331.

♂ *ad. Porzanæ bailloni* similis sed major, corpore suprà magis olivaceo et minus albo guttato: tectricibus alarum immaculatis: remige extimo in pogonio externo fusco immaculato: corpore subtùs sicut in *Porzanâ bailloni* picturato, sed abdomine imo et subcaudalibus indistinctè fasciatis: rostro viridi-flavo, ad basin rubro: iride coccineâ: pedibus viridibus.

♀ mari dissimilis: corpore suprà sicut in mare colorato sed pallidiore: capitis lateribus griseo-schistaceis: mento et gulâ superiore albis: gutture, pectore et abdomine ochraceo-carneis: abdomine imo et subcaudalibus sicut in mare picturatis sed pallidioribus.

*Adult Male* (Southern France, May). Resembles *Porzana bailloni*, but is larger, the upper parts are more olivaceous and less spotted, these white spots being confined to the back, the wing-coverts being unspotted, and the black markings are more blurry; first primary dark brown on both webs, and not

externally marked with buffy white as in *Porzana bailloni*; underparts deep slate-blue, but the lower abdomen and under tail-coverts are less distinctly barred than in *Porzana bailloni*; bill yellowish green, except at the base, where it is bright red; iris blood-red; legs green. Total length about 8 inches, culmen 0·75, wing 4·15, tail 2·3, tarsus 1·3, middle toe with claw 1·75.

*Adult Female* (Southern France, May). Differs from the male in lacking the blue colour on the underparts; upper parts as in the male, but rather lighter; sides of the head greyish slate-blue; chin and upper throat white; lower throat, breast, and abdomen flesh-pink, with an ochreous tinge; the lower abdomen and under tail-coverts marked as in the male, but paler.

*Young* (Lower Volga, April). Resembles the young of *Porzana bailloni*, but may be distinguished by its larger size, by the absence of the broad white margin to the first primary; and the sides of the head, neck, and breast are paler, being almost pure white, slightly marked on the margins with blackish grey.

The range of the Little Crake is more restricted than that of Baillon's Crake; for it is not found so far east, west, or south as that bird. It occurs throughout Europe, but only ranges into Western Asia and North Africa.

In Great Britain it is only known as a rare straggler; and there is no instance on record of a nest having been found here, though it may very possibly have bred with us. It was first known as a British species in 1809, a specimen having been shot near Ashburton, in Devonshire. Besides this, Yarrell (Brit. B. iii p. 117) enumerates the following occurrences, viz.:—one, Norfolk, obtained by Mr. Foljambe in May 1812; one near Chelsea; one shot on the 6th May, 1807, on the banks of the Yore, near Wensley, Yorkshire, but not recorded until 1823; one, Bramwell, near Cambridge, in March 1826; one recorded in 1829 as having been obtained in 1807 in Ardwick meadows, near Manchester; one recorded in 1834 by Mr. Hoy as having been shot near Yarmouth; one near Shoreham in October 1835; and one recorded by Mr. W. C. Williamson in 1836 as having been killed near Scarborough. Besides these, however, there are several later instances of its occurrence; for it has been said to have been obtained near Hastings in April 1859, at Seaford in March 1848, near Pevensey in March 1862, in Somerset early in October 1870, and in Hampshire; for Mr. Mansel-Pleydell says that two were shot by Mr. G. Churchill, of Alderholt Park, Fordingbridge, but that he knows of no other instance of its occurrence in that county. It appears to have occurred more frequently in the eastern counties than elsewhere; and Mr. Stevenson enumerates the following instances of its occurrence in Norfolk (several of which, as will be seen, are also given above), viz.:—one stated by Montagu to have been discovered in a poulterer's shop early in May 1812 by Mr. Foljambe; one shot at Buckenham Ferry in August 1827; one, an immature bird, obtained at Neatishead in March 1828; one shot on Oulton Broad, near Lowestoft, in 1830—these three recorded by Mr. Lombe. Hunt states that one was shot by Mr. Girling in the neighbourhood of Scottow, and one killed at Bradestone, prior to 1829. According to Mr. Joseph Clarke, of Saffron Walden, two were shot by Mr. Richers near Yarmouth, March 1833; and Captain Glasspoole killed two on Horsey Broad in 1833. Between 1833 and 1847, Mr. Stevenson remarks, it is not recorded as having been obtained; but one was shot on the 30th of March in that year on the wet marshes adjoining the large sheet of water at Heigham Sounds; one was shot by Mr. J. Dickens at Dilham Fen on the 26th of April 1852; one was shot at Catfield on the 8th May 1855; and

Mr. Harting states that he saw one, but did not secure it, near the Bure, about five miles from Yarmouth, on the 25th of October, 1867.

Referring to these recorded occurrences, Mr. Stevenson writes (B. of Norf. ii. p. 399) as follows:—"With the exception of the Bradestone bird recorded by Hunt, which was possibly a Baillon's Crake, I see no reason, from the authorities I have quoted, to doubt the authenticity of any of the above instances. With no less than thirteen occurrences, then, in one county, of a species usually considered so rare, the Little Crake can scarcely be regarded as a merely accidental visitant. If the habits also of the larger and certainly more abundant species of Rail are difficult of observation, how much more so those of the Little and Baillon's Crake! whose small size and strictly aquatic nature afford every possible means of concealment, render their capture at any time a mere matter of chance. Judging, therefore, from the localities in which our Norfolk specimens have been found, and from the fact that the dates, where known, correspond exactly with the spring and autumn migrations of the Spotted Rails, we may, I think, fairly class the Little Crake (and the same reasoning applies equally to Baillon's) amongst those birds of passage which, for a time at least, periodically frequent our marshes. It is true the nest and eggs of the Little Crake have never been identified in Norfolk, nor, until the summer of 1866, was there any record of those of Baillon's Crake having been taken; yet in the very same locality (Heigham Sounds) where eggs presumed to be of the latter were discovered by the merest accident, both species have been observed in spring, and both in all probability remain occasionally with us to breed. It should, however, be remarked that, with one exception (the locality of which is unknown), the specimens here recorded, though produced within the bounds of the 'broad' district, were all found in the vicinity of the smaller broads, or on the 'ronds' bordering upon the Bure and Yare, where it is obvious the chances of flushing them would be infinitely greater than amidst the interminable tracts of reeds which characterize our larger waters. The three examples killed in March were evidently met with on their first arrival, and might, or might not, have continued their journey northwards, while the one in April and the two in May would most probably have remained to breed. Again, the one killed in August had possibly passed the summer with us; and Mr. Harting's bird, in October, may have visited us on its passage southwards." Mr. Cordeaux states (B. of Humber Dist. p. 144) that he flushed a Crake in October 1870 near Great Cotes, which he is sure was a Little Crake, but he did not obtain it.

In Scotland the present species has occurred only once. Mr. Robert Gray says (B. of W. of Scotl. p. 334) that Mr. Thomas Edward, of Banff, informed him that one was found dead in a plantation in the parish of Grange, Banffshire, on the 12th March 1852. It has also, according to Canon Tristram, been obtained once in Ireland, at Balbriggan, on the 11th March 1854. The Little Crake has not been met with in the Færoes, and in Scandinavia it is of very rare occurrence, for it has not been observed in Norway; but Mr. Meves shot one on Gottland in 1856, and, according to Westerlund (Peterm. Mitth. 1870, p. 374), on the 17th June 1862 it was found breeding in the southern part of Kalmar Län, in Sweden. In Denmark, however, it has been met with more frequently; for Collin says (Skand. Fugl. p. 554) that, according to Boie, it has occurred at Kiel, Scheel says that it has also been met with on Möen, and Teilmann states that it has also occurred on the Vilslev Enge. In Finland the Little Crake has not occurred; and

Mr. Sabanäeff informs me the present species is rare in Central Russia, but it breeds in the Zaraisk district, government of Riazan, and occurs near Moscow, on passage, in spring. According to Meyer (Vög. Liv- u. Esthl. p. 217) it breeds, though rarely, in the south of Livonia, and it also occurs in Courland. In Poland, Mr. Taczanowski says, it is much rarer than the Spotted Crake, and he is unaware, he adds, whither it migrates. Naumann says (Vög. Deutschl. ix. p. 555) that the Little Crake "is commoner in the south and east than in the north of Germany. In Austria, Silesia, Saxony, on the Rhine and Main, it is not rare, as also in Anhalt." It appears, however, according to Von Homeyer and Dr. Holland, to breed in Pomerania, and its nest has been (J. f. O. 1863, p. 288) taken in Mecklenburg. It has been observed in Westphalia, Oldenburg, near Hamburg, and in Holstein, near Brunsbüttel. In Southern Germany it is said to be not uncommon during the breeding-season, as, for instance, in Würtemberg, Bavaria, and Silesia. Tobias states that it breeds in Ober-Lausitz; Count Rödern found it breeding near Glogau; and I give below particulars of its nidification in Nieder-Lausitz, as observed by Dr. Kutter. Dr. Fritsch states (J. f. O. 1871, p. 381) that it nests on ponds near Frauenberg, in Bohemia, and used formerly to occur near Pardubic, on the Ceperka pond, and on the Bohdanec, as is obvious from the number of specimens in the collection at Pardubic. Otherwise it is rare in Bohemia; for Lokaj only obtained two, and Dr. Fritsch himself never procured a fresh-killed example. In Transylvania, Messrs. Danford and Harvie-Brown write (Ibis, 1875, p. 418), "the Little Crake is not uncommon. We probably saw it at Záh and Tóhát. The specimens in the Museum at Klausenburg were got at Szamosfalva. Not rare at Gyéké." Natterer obtained it in Illyria, and Hanf in Styria, in April and May. It breeds in Upper Austria and in several parts of Hungary, and is said to be common in the Bukowine during the breeding-season. Passing north, again, I find it recorded by Mr. Cordeaux (Ibis, 1875, p. 186) as having occurred once, on the 22nd April 1854, in Heligoland; and Von Wickevoort-Crommelin, in his excellent monograph of the Rails found in the Netherlands, writes (p. 24) that he obtained a young male, killed near Zwartsluis, in Overijssel, in the Netherlands, on the 9th September 1872. It is, he adds, very rare in Belgium, where it has been observed in Brabant and near Liège, and has also occurred in Luxemburg. It occurs regularly in the north of France, and is of irregular occurrence in Picardy and Lorraine, where it has been found near Metz and Nancy. It is also found, though rarely, in the departments of the Eure-et-Loire, Seine-et-Marne, and Yonne. It occurs on passage in the Jura and near Lyons, and is met with regularly in the west of France, and is said to be common in the department of the Charente-Inférieure. According to Mr. A. Lacroix, it is found on passage in the French Pyrenees, breeds rarely in Hérault and Tarne-et-Garonne, and regularly in Aude and the Pyrénées orientales. It arrives in the south of France late in March; and a few pairs breed there. Bouteille states (Orn. Dauph. p. 207) that it also breeds in Dauphiné. Professor Barboza du Bocage says it is rare in Portugal; but it is tolerably common in Spain. Mr. Howard Saunders informs me that its range is more eastern than that of Baillon's Crake; it seems to be most abundant on the spring passage near Valencia, and on the autumn one near Malaga, but he never met with it west of the latter place.

Passing eastward again, I find it recorded as common on passage in Savoy, where it also breeds; and it also breeds commonly throughout Italy. It is also recorded from Sicily by

Benoit, and is common on the spring passage in Sardinia. In Malta, Mr. C. A. Wright states (Ibis, 1864, p. 150), it is "rather plentiful in spring in some years, but less so in autumn. Oftenest met with in March, in low humid localities at the head of the Great Harbour." Lord Lilford saw a specimen killed near Butrinto, in the Ionian Islands; and, according to Dr. Krüper, it occurs in Greece; but he is not sure if it breeds there, and remains also over winter. It is rare in Corfu, where it arrives in April; but in Crete, Colonel Drummond-Hay says, it is common late in that month. Messrs. Elwes and Buckley state (Ibis, 1870, p. 332) that it is found near Constantinople, but is not abundant. Colonel Irby says that it is common in April in the Crimea; and it breeds not uncommonly, Goebel states (J. f. O. 1871, p. 145), near Uman, in Southern Russia. I do not find any record of its occurrence in Palestine or North-east Africa, though it is said by Loche to be resident in Algeria; and it has not been observed by Favier in Morocco.

To the eastward the present species is found as far as North-west India. Dickson and Ross obtained it at Erzeroum; Dr. Severtzoff states that it occurs in Turkestan; and Mr. A. O. Hume writes (Stray Feathers, i. p. 251) that "this little Rail is very abundant in Sindh. In some of the inland pieces of water (that at Dost Ali for instance) a dozen may be seen at the same time, busy feeding, running on the lotus-leaves, or again swimming rapidly from leaf to leaf." Mr. Hume adds that the boatmen told him that it breeds regularly in Sindh.

The Little Crake has not been met with in Dauria, and consequently it cannot be the *Rallus pusillus* of Pallas. Besides, Pallas's description is somewhat indefinite and will suit equally well for Baillon's Crake, to which species it not improbably refers, as this latter Crake is found in Dauria; but as Pallas's name has been in such general use for the present species, and the description is by no means a good one, it cannot well be used for Baillon's Crake, and must be discarded altogether. Scopoli's description of *Rallus parvus* quite clearly refers to the Little Crake, especially as he speaks of the base of the bill being red, and in any case takes precedence of Pallas's name. I have therefore no hesitation in using it for the present species.

In general habits the Little Crake closely resembles its allies *Porzana maruetta* and *Porzana bailloni*; and like those it is very secretive, living in overgrown marshy places, where it finds excellent shelter, from which it is extremely difficult to drive it out; for it will only take wing when hard pressed, and usually seeks safety on foot, taking refuge in the densest reed-growth. It swims with ease and grace, but flies heavily, and, after having traversed a short distance, drops into the shelter of the reeds again. As a rule it is rather more frequently seen in open pieces of water than *Porzana bailloni*; and Naumann remarks (*l. c.*) that it will not unfrequently show itself in the open when any one is near, and utter its call-note as if in defiance. Its call-note is tolerably loud, and is described by Naumann as resembling the syllables *kik kik kik* frequently uttered, not unlike the call of *Picus medius*. In breeding-habits it closely resembles Baillon's Crake; and its nest and eggs are not unlike those of that species.

Dr. Kutter, to whom I was indebted for the first eggs of the Little Crake I possessed, has published (J. f. O. 1865, pp. 334–341) some very detailed and interesting notes respecting the nidification of the present species, of which he took several nests on a pond near Cottbus. The first nest found by him, which contained three eggs, he describes as being carefully constructed of dry, worn flag-leaves, rather flat in form, the outside diameter being $5\frac{1}{2}''$, the diameter of the

cup $3\frac{1}{2}''$, and the depth of the cup $1''$. It was placed about a foot above the surface of the water, and rested against a dead alder branch, being carefully concealed by the surrounding reed-grass. A second nest was rather carelessly built on dead aquatic herbage, only a few inches above the water; and another was built of dry sedge-grass. So far as he could ascertain, eight seems to be the full complement of eggs deposited by this Crake. I possess a tolerably large series of its eggs, which differ from those of Baillon's Crake in being larger and paler, the ground-colour more ochreous, and the surface-spots more scattered.

The specimens figured are the adult male and female above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♂, *c*, ♀. Southern France, September. *d*, *e*, *f*, ♀, *g*, ♂. Southern France, May. *h*, ♂, *i*, *juv.* Silesia. *k*, *juv.* Lower Volga, April 1876. *l*, ♀. S. Russia, May (*W. Schlüter*).

*E Mus. H. B. Tristram.*

*a*, ♂. Balbriggan, Ireland, July 1859 (*H. A. Hamilton*).

*E Mus. Howard Saunders.*

*a*, ♂. Malaga, August 1868 (*Rios*). *b*, ♂ *ad.* Catarroja, Valencia, March 26th, 1872 (*Martin*). *c*, ♂, *d*, ♀, *e*, ♂, *f*, ♀, *g*, ♂ *ad.* Catarroja, Valencia, March 12th to 23rd, 1873 (*Martin*). *h*, *i*, *j*, ♀. Catarroja, March 8th and 16th, 1874 (*Martin*).

## Genus CREX.

*Rallus* apud Brisson, Orn. v. p. 159 (1760).
*Gallinula* apud Latham, Ind. Orn. ii. p. 766 (1790).
*Crex*, Bechstein, Gemeinn. Naturg. Deutschl. i. p. 461 (1805).
*Ortygometra* apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 34 (1816).

This genus contains but a single species, our common Corncrake, which inhabits the Palæarctic and Ethiopian Regions, occurring as a very rare straggler in the Nearctic Region. It differs from the species belonging to the genus *Porzana* in its habits (for it frequents dry instead of damp localities) as well as in structure. It is usually found in corn-fields, meadows, &c.; and, owing to its form, it is able to run amongst the standing corn and high grass with ease. Its call-note is a peculiar harsh call, resembling the sound produced by drawing a stick across a strong comb. It feeds on insects of various kinds, beetles, spiders, flies, and worms. In its nest (which is merely a depression of the ground, sparingly lined with a few straws) it deposits numerous buffy-white eggs blotched and spotted with rufous. The young are able to follow the parent bird immediately they leave the shell, and are soon able to take care of themselves.

*Crex pratensis*, the type of the genus, has the bill much shorter than the head, stout, compressed, much higher than broad at the base, considerably decurved, and slightly notched at the tip; nasal groove very large; nostrils median, elongated-oblong; wings rather short, broad, rounded, the first quill about equal to the fourth, the second longest; tail short, rounded, soft, and weak; legs stout, moderately long; tarsus scutellate; the lower part of the tibia bare for a short distance; toes rather long and slender; claws compressed, slender, curved, acute.



E.Neale lith

Hanhart imp

LANDRAIL.
CREX PRATENSIS.

# CREX PRATENSIS.

(LAND-RAIL.)

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*Rallus genistarum* sive *ortygometra*, Briss. Orn. v. p. 159, pl. xiii. fig. 2 (1760).
*Rallus crex*, Linn. Syst. Nat. i. p. 261 (1766).
*Le Râle de terre* ou *de genêt*, Buff. Hist. Nat. Ois. viii. p. 146 (1781).
*Gallinula crex* (L.), Lath. Ind. Orn. ii. p. 766 (1790).
*Crex pratensis*, Bechst. Gemeinn. Naturg. Deutschl. i. p. 461 (1805).
*Ortygometra crex* (L.), Leach, Syst. Cat. B. & M. Brit. Mus. p. 34 (1816).
*Crex herbarum*, C. L. Brehm, Vög. Deutschl. p. 694 (1831).
*Crex alticeps*, C. L. Brehm, Vög. Deutschl. p. 694 (1831).

*Corn-Crake*, *Land-Rail*, English; *Treun-re-treun*, *Treunna*, Gaelic; *Râle des prés*, French; *Codornizão*, Portuguese; *Guia de los codornices*, Spanish; *Re di quaglie*, Italian; *Gallotz ta Germania*, Maltese; *Wiesen-Sumpfhuhn*, *Wiesenralle*, German; *Kvartelkoning*, Dutch; *Vagtelkonge*, Danish; *Eakurskrivt*, Færoese; *Agerrixe*, Norwegian; *Ängknarr*, *Kornknarr*, Swedish; *Ruisrääkkä*, Finnish; *Dergatsch*, *Korostéll*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 750; Werner, Atlas, *Gralles*, pl. 34; Kjærb. Orn. Dan. taf. 38; Frisch, Vög. Deuschl. taf. 212; Fritsch, Vög. Eur. taf. 32. figs. 2, 6; Naumann, Vög. Deutschl. taf. 236; Sundevall, Svensk. Fogl. pl. 45. fig. 2; Gould, B. of Eur. pl. 341; id. B. of G. Brit. iv. pl. 87; Schlegel, Vog. Nederl. pl. 256; Bettoni, Ucc. Lomb. pl. 91.

♂ *ad.* pileo, collo postico et corpore suprà cum caudâ et supracaudalibus olivaceo-ochraceis et rufescenti-ochraceis nigro-fusco guttatis: remigibus saturatè fuscis rufescenti lavatis: tectricibus alarum cinnamomeo-ferrugineis: mento albido, capitis lateribus griseo-cæruleis, vittâ per oculum ductâ pallidè brunneâ: gulâ, gutture et pectore schistaceo-cinereis vix fusco tinctis: colli lateribus cinereo-ochraceis rufescente fusco guttatis, hypochondriis rufescenti-fuscis albo fasciatis: abdomine et subcaudalibus albis, his rufescente fusco notatis: rostro fusco-corneo: iride brunneâ: pedibus pallidè griseo-carneis.

♀ *ad.* mari similis sed sordidior, nec gutture et pectore schistaceo-cinereis, sed pallidè fusco-cinereis.

*Adult Male* (Hampstead, April). Crown blackish brown marked with warm ochreous; sides of the head blue-grey, with a pale brown band passing through the eye to the neck; hind neck, back, scapulars, rump, tail, and upper tail-coverts blackish brown, the feathers broadly margined with greyish ochreous and reddish ochreous; quills dark brown with a rufous tinge; wing-coverts rusty red; chin white; throat and breast blue-grey tinged with brown; sides of the neck greyish ochreous marked with dark reddish brown; flanks reddish brown barred with white; abdomen and under tail-coverts white, the latter marked with reddish brown; bill dark brown; iris clear brown; legs greyish flesh-colour. Total length about 10·5 inches, culmen 0·8, wing 5·5, tail 2·15, tarsus 1·5.

*Adult Female* (Hampstead, April). Differs from the male in being paler in colour, and lacking most of the blue-grey colour on the throat and breast; but the ash-grey stripe over the eye, and this colour on the side of the head, are there.

*Adult in autumn* (Hampstead, September). Differs from the adult in spring dress in having the spots on the upper parts smaller, the underparts paler, and the flanks less marked with rufous.

*Young Male* (September). Resembles the old male; but the colours are duller, the chin brownish grey, the upper parts are slightly darker, and the larger wing-coverts are slightly barred with white.

*Young in down* (Boel, Jutland). Covered with close, rather short, deep-black down; a few obsolete dots of white on the back, an irregular yellowish brown band along each side of the abdomen, and a light spot on each ear.

Throughout the whole of Europe and Western Asia the Corn-Crake is generally distributed, ranging up nearly into the arctic circle during the summer season; and in the autumn it migrates into Africa as far south as the Cape colony.

In Great Britain it is very generally distributed during the summer season, and breeds in every county in the United Kingdom in suitable localities, being, however, probably more common in the southern portions of England than elsewhere, arriving late in April or early in May, and leaving again in September or October. In Scotland, Mr. Robert Gray writes (B. of W. of Scotl. p. 331), the Corn-Crake "is found in every district, cultivated and uncultivated, on the western mainland, from the Mull of Galloway to Cape Wrath, and also over the whole extent of both groups of islands, and all the rocky islets of the west coast, extending to Heisher rocks, the Monach islands, and St. Kilda." In Shetland, Dr. Saxby says, they "arrive in considerable numbers about the end of May, and may be heard in every cultivated district throughout the islands. At the time of their first appearance vegetation has made so slight an advance that they are easily seen, being quite unable to conceal themselves among the short grass or corn. I have killed them in autumn as well as in the spring, and have usually found them in good condition at both seasons." In Ireland, as in England, it is a common and widely distributed summer visitant. It has been stated by some American ornithologists that the Corn-Crake is a constant visitor to Greenland: but this is certainly an error; for Professor Reinhardt writes (Ibis, 1861, p. 11) as follows:—"I am aware of one case in which this bird has been misguided to Greenland. The specimen (an adult female) was obtained at Godthaab, and presented to the Royal Museum in 1851. Accordingly I have been somewhat surprised to see that Mr. Cassin supposes (Reports of Expl. &c., ix. p. 751) the bird to be a constant summer visitor to Greenland, while it really does not even occur in Iceland as a regular visitor." It is not included by Professor Newton in his list of the birds of Iceland; but on the Færoes it is said to be a not uncommon spring and summer visitor; and Mr. Müller informed Captain Feilden that he received one from Hoidenor on the 5th October, and another from near Thorshavn on the 17th September. Mr. Müller possesses eggs taken in the island of Sandoe. In Scandinavia it is very generally distributed during the summer season. In Norway it breeds throughout the lowlands up into the polar circle, and is common on the islands off Helgeland and at Bodö. It also occurs all along the west coast from Jæderen up to the Trondhjemsfiord, and is met with on

the fells as high as arable land is found. North of the polar circle, Mr. Collett states (Nyt Mag. for Naturvid. b. xxiii. p. 175), it is of irregular occurrence. In 1873 it was found breeding on the island of Rollen, a few miles north of Tromsö, but has not been seen there of later years, though one was shot on Tromsö, in 69° 40′, on the 15th October 1875. As an instance of a late brood he mentions that a nest, containing twelve fresh eggs, was taken on Jæderen early in September. It arrives in Southern Norway early in May, leaving again in the late autumn, the young birds remaining sometimes till the end of September; and Mr. G. Brandt observed this bird in the Surendale in the middle of October 1871. Throughout Sweden, Professor Nilsson says, the Corn-Crake is found from Southern Skåne up into the arctic circle; but it is somewhat local in its distribution, for in some places it is never heard. In Finland, according to Dr. Palmén, it is common in the southern districts, arriving about the 21st of May, and leaving late in August or early in September, and is met with northwards in Kankaanpää, Nyslott, and Ladoga-Karelen, but becomes rare in Southern Österbotten, in the district between Wasa and Gamla Karleby, and has been met with sparingly near Uleåborg. In 1870 it was met with all the summer in a district in Pudasjärvi; and Sahlberg observed it in September of the same year between Paanajärvi, in Kuusamo, and at Soukelo, in South-west Russian Lapland, close to the arctic circle. In 1868, according to Mr. Knobloch, a nest, with eight eggs, was found in Muonioniska, in 68° N. lat. In Russia it is generally distributed in the central districts, and is found in the Archangel Government at Lake Onega, near Wuitegra; but I do not find it recorded from Archangel itself. Mr. Sabanäeff informs me that it is found in the Olonetz and Perm Governments up to about 60° N. lat. In the Ural this gentleman found it less common than elsewhere. In Poland it is, Mr. Taczanowski writes, very common, arriving early in May and leaving about the middle of October. Throughout the whole of Germany it is very generally distributed in the summer season; and Mr. Collin writes that it breeds in many of the cultivated portions of Denmark, but is most common during the seasons of passage, in May and October. It arrives in Holland about the middle of May, remains to breed, and leaves again in September and October. In Heligoland it occurs, Mr. Cordeaux says (Ibis, 1875, p. 186), in April and May, and again in the middle of August and September during warm weather pretty commonly, though never in great numbers. Mr. J. van Wickevoort Crommelin states, in his notes on the Rails of the Netherlands, that it is more common during the breeding-season than the Water-Rail, and is seen during passage, in September and October, in the maritime dunes. In France it occurs on passage and breeds, and is said to be to some extent resident in the south of France. It is said to be a regular visitant to Spain; but Mr. Howard Saunders states that it does not breed there; and Colonel Irby writes (Orn. Str. Gibr. p. 142) as follows:—"The Land-Rail does not seem to remain in Andalucia during the breeding-season, as I never heard its well-known cry; but I have seen it as late as the 2nd of May. It is not obtained in any abundance, but, like other Crakes, is, no doubt, more common than it appears to be. It occurs most frequently in October and February, and, as Favier states concerning it in Morocco, is found during the winter." Vidal, however, records it as being common in Almeria in the summer season. It breeds in Piedmont, Lombardy, and Venetia; but elsewhere in Italy, Salvadori says, it is only met with on passage. Benoit states that it is more numerous in Sicily in the spring than in the autumn. Cara says that it is resident in Sardinia; but Salvadori asserts that he has never

met with it there in the winter season; and Mr. A. B. Brooke states (Ibis, 1873, p. 336) that he never saw or heard any on that island. I have received specimens from Corsica; and Mr. C. A. Wright states (Ibis, 1864, p. 150) that it is not uncommon in Malta, arriving early in the spring and appearing again in the autumn. Lord Lilford records it as occurring sparingly in Corfu in April and September; and Dr. Krüper says that it occurs in Greece only on passage, but that possibly a few may remain there all winter.

Throughout Southern Germany it is found almost everywhere during the breeding-season. In Styria it is more numerous some seasons than in others, and breeds there, arriving early in May and leaving late in September or early in October, some few remaining until the first week in November. Dr. Fritsch states (J. f. O. 1871, p. 381) that it is common throughout Bohemia in fertile localities during the breeding-season, leaving in the late autumn; and the Ritter von Tschusi-Schmidhofen, referring to its occurrence in Austria, says (J. f. O. 1871, p. 119) that in 1867 it was very numerous near Arnsdorf, there being then many clover-fields; but in 1868, 1869, and 1870 it was not seen, as all the clover-fields were sown with grain. Messrs. Danford and Harvie-Brown record it (Ibis, 1875, p. 418) as common everywhere in Transylvania, and migratory; and it is found in Turkey and in the countries skirting the Lower Danube. In Southern Russia Mr. Goebel says (J. f. O. 1871, p. 145) he has only seen it on passage, and in the spring it is generally seen in meadows where there is an old growth of grass, whereas in the autumn it occurs in the oat- and buckwheat-fields.

In Asia Minor and Palestine it appears to be resident. Strickland says that it winters near Smyrna; Dr. Krüper remarks that his servant shot one near there on the 22nd of February; and, according to Canon Tristram (Ibis, 1868, p. 327), it is universally diffused and met with at all seasons in Palestine. In North-east Africa it occurs as a winter visitant. Captain Shelley writes that in Egypt it may be met with singly in the clover-fields, but is not plentiful; and Von Heuglin says that it arrives in Egypt and Arabia late in August or early in September, and ranges far into the interior in the winter. He met with it in September near Chartum; and Lefèvre observed it in the province of Wodscherat, in Abyssinia, in the same month. It passes northward, again, in March and April; and Von Heuglin has seen stragglers in Lower Egypt early in May. In Algeria it is, to some extent, sedentary, and a few pairs breed on the humid plains; but it is chiefly met with on passage; and, according to Favier (*fide* Colonel Irby, *l. c.*), it is found in Morocco on passage, crossing the Straits during the month of February, returning in August, September, and October, being occasionally obtained throughout the winter months. Vernon Harcourt records it from Madeira; and Mr. F. DuCane Godman, referring to its occurrence in the Azores, writes (Ibis, 1866, p. 102) as follows:—"Mr. J. Dabney showed me a stuffed Corn-Crake, which was killed two or three years previously by flying against a window of his house. I also saw another stuffed specimen in a collection in Angra, said to have been killed in Terceira." On the continent of Africa it has been met with as far south as the Cape colony; for Mr. Layard writes (B. of South Africa, p. 338):—"It seems to be not uncommon in Natal, where, according to Mr. Ayres (Ibis, 1863, p. 331), they are plentiful inland during the summer months. Only one single specimen, however, has occurred in the Cape colony; and this was killed on the Cape flats, near Wynberg, by Mr. H. Dumbleton in 1864;" and he further adds (Ibis, 1869, p. 377) that Dr. E. Atherstone wrote to him from Graham's Town under date of the 19th April, 1869, saying

that it had been very plentiful that season near the coast. Mr. Barratt states (Ibis, 1876, p. 213) that he received one from the district of Lydenberg, where it is said to be rare; Mr. T. E. Buckley (Ibis, 1874, p. 388) obtained one in the Matabili country; and Mr. Gurney writes, respecting its occurrence in Natal (Ibis, 1863, p. 331), as follows:—"These birds are scarce on the coast, but become more plentiful inland. They are only found here during the summer months. Having been once flushed, it is a difficult matter to put them up a second time out of the long grass; for, besides running with great swiftness, they have a curious method of evading the dogs by leaping with closed wings and compressed feathers over the long grass some three or four yards; and then running a short distance, they leap again. The scent being thus broken, they generally evade the most keen-scented dogs; and so quickly are these strange leaps made, that it is only by mere chance that the birds are seen."

To the eastward the Corn-Crake is found at least as far as Northern India; and Pallas states that it occurs in Siberia as far east as the Lena. According to Dr. Severtzoff it breeds and occurs on passage in Turkestan. There is a specimen in the British Museum from Persia, obtained by Major St. John, who believes that he shot it at Tehran; and Dr. Jerdon writes (B. of India, iii. p. 727) that "it is stated to have occurred in Northern India, and is common in Afghanistan. A writer in the 'Bengal Sporting Magazine' (1842, p. 870) states, I may add, that it has once been obtained in Oudh. In Eastern Asia it does not appear to have been met with; but it has been said to have been once obtained near Nelson, in New Zealand, which, if correct, is a locality very far outside its normal range. It has also straggled into the Nearctic Region; for Professor Baird states (B. of N. Am. p. 751) that it has occurred on several occasions on the east coast of the United States; and Wedderburn records it from the Bermudas, stating that a young male, a bird of the year, was shot on the Pembroke marsh on the 25th October 1847.

Owing to its secretive habits, and being at the same time a rather noisy bird than otherwise, the Land-Rail is much better known by its harsh, grating note than by any thing else. It is essentially a frequenter of cultivated districts and of the lowlands, though seldom of really wet, swampy ground; for it prefers meadows and corn-fields, where the ground is open and there are but few bushes or trees. It does not, however, affect very dry soil, but fields where it is neither very wet nor yet very dry, and especially, it would seem, where a few flowers are intermixed with the other herbage; and it evinces a partiality for clover-fields. In most parts of Europe it is a migrant or, rather, a summer resident, arriving in the spring and leaving again for the south in the autumn, migrating, it would seem, altogether at night, and when on passage flying at a considerable altitude. Naumann, who was a most careful field-naturalist, assures us that it always migrates singly, and that in the autumn the old birds leave first, and are followed by their young. As soon as it arrives in the spring it gives notice of its presence by its well-known call. It appears to move about at night, and more especially in the early morning and late evening; and though it is not unfrequently seen about during the day, yet it prefers, as a rule, to remain quiet then. Its form enables it to run about with ease amongst the grass and corn; and it always evinces a dislike to taking wing, preferring, if possible, to seek security by running; and a dog will sometimes spring on and catch one on the ground, so close will they at times crouch before the dogs. Its cry, resembling the syllables *crek*, *crek*, *crek*, may be heard at all times of the day, but more especially early in the morning and late in the evening; and it appears to

possess considerable power as a ventriloquist, as it is most difficult to judge where the bird is by its note, which is now loud, now low, as if quite close or at a considerable distance. When uttering its cry the bird usually stands still, the neck rather drawn in; but sometimes it calls as it moves leisurely along. Bechstein relates that a pair which he kept in confinement used to nestle close to each other and utter a low purring note, something like the purr of a cat. It is a very shy bird, and evades observation as much as possible, always slipping away to dense cover when disturbed. Its movements, when not alarmed, are graceful and elegant. It moves sedately, lifting its feet rather high, jerking its tail, and moving its head backwards and forwards. When alarmed it stops, crouches, and then starts off with extended neck and body thrown forward, and is soon out of danger.

It feeds on insects of various kinds, especially lepidoptera, small beetles, spiders, small flies, and worms, and frequently gorges itself with the latter. A few small stones or some coarse sand are generally found in its stomach, but seldom any vegetable matter.

Very shortly after the Land-Rail arrives at its breeding-haunts it commences the business of nidification. The nest, which is usually in a clover-field, a meadow, or a corn-field, is a mere hollow in the ground lined with a few straws; and the eggs, from eight to twelve in number, are usually deposited in June; and, as a rule, unless the first nest is destroyed, it is said not to breed twice in the season. The young as soon as they emerge from the shell leave the nest and follow their mother, and in a few days are able to run with celerity and hide with ease when any danger threatens.

The eggs of the present species much resemble those of the Water-Rail, but are, as a rule, rather larger in size, paler in coloration, and more profusely marked. A series in my collection vary in size from $1\frac{16}{40}$ by $1\frac{1}{40}$ to $1\frac{20}{40}$ by $1\frac{2}{40}$ inch, and are stone-white in colour, marked with pale purplish shell-markings, and dark red surface-spots and blotches.

The specimens figured are those above described in spring plumage, and are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, c,* ♂, *d,* ♀. Hampstead, near London, April 28th, 1870. *e,* ♀, *f,* ♂ *juv.* Hampstead, September (*Davy*). *g, pull.* Boel, Jutland (*Benzon*).

*E Mus. Salvin and Godman.*

*a,* ♀. Park Hatch, Surrey, September 1865. *b,* ♂. Bodö, Norway, June 20th, 1857 (*F. D. Godman*).

*E Mus. Brit. Reg.*

*a,* ♂. Mount Hermon (*Tristram*). *b.* Tehran, Persia (*Major St. John*). *c.* Macamac, Transvaal, Decembe 3rd, 1874. *d.* Natal (*Ayres*).

## Genus PORPHYRIO.

*Porphyrio*, Brisson, Orn. v. p. 522 (1760).
*Fulica* apud Linnæus, Syst. Nat. i. p. 258 (1766).
*Gallinula* apud Latham, Ind. Orn. ii. p. 768 (1790).
*Hydrionia* apud Bonaparte, Compt. Rend. xliii. p. 599 (1856).
*Cesarornis* apud Bonaparte, ut suprà.
*Hydrornia* apud Hartlaub, Orn. Westafr. p. 243 (1857).
*Porphyrio* (*Gallinula*) apud Savi, Orn. Tosc. ii. p. 422 (1874).

The Purple Gallinules are widely distributed, being found in the Palæarctic, Ethiopian, Oriental, Australian, and Neotropical Regions, three species being found in the Western Palæarctic Region, one of which is resident in the southern portions of the region, whereas the other two are merely stragglers from the Ethiopian Region.

In habits these birds are said to resemble the Coots, more even than the Water-Hens. They frequent the borders of lakes, marshy places, and damp, wet localities which are covered with dense aquatic vegetation, where they can find ample opportunities of concealment. They keep close to the reed-thickets, and are hard to flush, even with a dog; and when they rise they flap heavily for a short distance. They are not companionable; and each pair keep to their own small domain, brooking no intrusion from others of their own species. They swim with ease, and climb about amongst the tall reeds with the greatest facility. Their call-note is a deep, loud, almost trumpet-like sound, which is frequently uttered at night. Their food consists of seeds and grains of various kinds, grass-shoots, aquatic insects, reptiles, &c.; and some authors say that they feed on fish. They nest amongst the dense aquatic vegetation where they live, building a nest resembling that of the Coot, and deposit several stone-ochreous eggs, blotched with violet-grey and deep brownish red.

Dr. Sclater states (Ibis, 1879, p. 195) that Gmelin (*l. c.*) never intended the term *veterum* to be used as a specific name for our Purple Gallinule, but merely told his readers that the bird he referred to was the "*Porphyrio*" *veterum*, i. e. of ancient writers. Should this be the case, and the specific name *veterum* be discarded, as I think it ought to be, then it should stand as *Porphyrio cæruleus* (Vandelli), Flor. et Faun. Lusit. Spec. in Mem. da Academ. Real de Lisboa, 1797 (not 1780, as stated in the synonymy of that species).

*Porphyrio cæruleus*, the type of the genus, has the bill shorter than the head, very stout, much higher than broad at the base, tapering sharply to the point, gape-line nearly straight; frontal shield large, roundish; nostrils subbasal, roundish, lateral; wings moderate, full, the first quill about equal to the seventh, the second and third longest; tail short, rather soft, rounded; legs and feet very long and stout; lower part of the tibia bare, tarsus scutellate; toes very long and slender; claws long, slightly curved, acute; plumage soft, blended, glossy above; general coloration in adult dress deep blue.



J.G.Keulemans lith

M & N.Hanhart imp

PURPLE GALLINULE.

PORPHYRIO VETERUM.

# PORPHYRIO VETERUM.

(PURPLE GALLINULE.)

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*Porphyrio cæsius pedibus* et *rostro sanguineis*, Barrère, Orn. Spec. Nov. p. 61 (1745).
*The Purple Water-Hen*, Edwards, Nat. Hist. Birds, ii. p. 87, pl. 87 (1747).
*Porphyrio veterum*, S. G. Gmelin, Reise Russl. iii. p. 79, footnote, pl. 12 (1774).
*Fulica cærulea*, Vandelli, Flor. et Faun. Lusit. spec. in Mem. Acad. real Lisb. 1780, p. 37.
*La Poule Sultane ou le Porphyrion*, Buffon, Hist. Nat. Ois. viii. p. 194, pl. 17 (1781).
*Fulica porphyrio*, Gmel. Syst. Nat. i. p. 699 (1788, partim).
*Fulica porphyrio*, Pallas, Zoogr. Rosso-As. ii. 156 (1811).
*Gallinula porphyrio*, var. β, Lath. Ind. Orn. ii. p. 768 (1790).
*Porphyrio hyacinthinus*, Temm. Man. d'Orn. ii. p. 698 (1820).
*Porphyrio antiquorum*, Bp. Comp. List. p. 54 (1838).
*Porphyrio cæsius*, Schleg. Mus. Pays-Bas, *Ralli*, p. 52 (1865, ex Barr.).

*Talève-porphyrion*, French; *Camão*, Portuguese; *Mancon azul*, *Calamon*, Spanish; *Pollo sultano*, Italian; *Kazir*, Moorish.

*Figuræ notabiles.*

Edwards, Nat. Hist. Birds, pl. 87; Gould, B. of Eur. pl. 340; Roux, Orn. Prov. pl. 383; Bree, B. of Eur. iv. pl. to p. 77.

*Ad.* pileo, collo postico, alis et corpore suprà saturatè ultramarino-cæruleis: remigibus in pogonio interno et rectricibus nigris vix cæruleo tinctis: capitis lateribus, mento, collo postico et laterali pulchrè turcino-cyaneis: corpore reliquo subtùs saturatè nigro-cæruleo, subcaudalibus niveis: rostro et scutella frontali puniceo-rubris, iride rubrâ: pedibus incarnato-rubris.

*Juv.* pileo saturatè fuliginoso-cyaneo: collo postico schistaceo-cinereo vix cæruleo tincto: corpore suprà sordidiùs quam in adulto colorato, uropygio nigro-schistaceo: capitis lateribus sordidè cinereo vix cæruleo tincto: mento et gulâ albo-cinereis: corpore subtùs reliquo sordidè cæruleo-schistaceo, plumis conspicuè cinereo apicatis, abdomine centrali albidiore, subcaudalibus niveis.

*Adult Male* (Andalucia, Spain). Crown, hind neck, and entire upper parts deep rich blue: quills on the inner web and the tail-feathers black with a slight bluish tinge; sides of the head, chin, throat, and upper breast rich turquoise-blue, the remainder of the underparts blackish blue, except the under tail-coverts, which are pure white: frontal plate and bill bright sealing-wax red; iris lake-red; legs flesh-red. Total length about 18 inches, gape 1·7, wing 9·5, tail 4·1, tarsus 3·5, middle toe with claw 4·8, claw 1·0.

*Adult Female.* Resembles the male.

*Young* (near Seville, 24th June). Crown sooty blackish blue, hind neck dark slaty grey with a bluish tinge; upper parts of a duller blue than the adult, the rump slaty blackish; sides of the head dull ashy grey

with a wash of blue; chin and upper throat ashy white; rest of the underparts dull bluish slate, the feathers broadly tipped with ashy grey, the centre of the abdomen whiter, and the under tail-coverts pure white.

*Nestling in down* (*fide* Malherbe, Faun. Orn. Sic. p. 198). Covered with bluish black down, the frontal plate, bill, and legs being white.

This richly coloured bird inhabits Southern Europe and North Africa, but has been met with, as a rare straggler, even as far north as the British Isles. Hancock, in his recently published catalogue of the birds of Northumberland and Durham, says that one was taken alive at Boldon Flats in August 1863, and another was caught near Ponteland in August 1873; but doubtless both these were birds escaped from confinement. Mr. Robert Gray says (B. of W. of Scotl. p. 337) that a specimen was shot near Campbeltown, in Argyleshire, in the first week of December 1863, and sent in the flesh to Mr. McCulloch, birdstuffer, Glasgow, in whose hands he saw it; and he adds that, after a careful scrutiny, he found nothing in its appearance to lead him to conjecture that it had escaped from captivity.

With the above exceptions I find no record of its occurrence in Northern Europe; and it is only met with as a rare straggler to the central portion of the continent. Landbeck states (Vög. Würt. p. 67) that one was killed in the winter of 1788 at Melchingen, in Sigmaringen, about two hours' journey from Mössingen, which is the only instance of its occurrence in Germany; but it occurs at intervals in the south of France, and is said to frequent the marshes at the mouth of the Rhone. Professor Barboza du Bocage states that it occurs at Ribatejo, in Portugal; and the Rev. A. C. Smith says (Ibis, 1868, p. 455) that there are many specimens in the museums of Lisbon and Coimbra, and that he was informed that it is by no means rare in Portugal. In Spain, Colonel Irby writes (Orn. Str. Gibr. p. 146), "it is very irregular in its appearance, both as to time and locality. In some years, during January and February, they are to be seen near Gibraltar in situations where they do not occur at any other time, and are then doubtless on migration;" and Mr. Howard Saunders says (Ibis, 1871, p. 225) that "though still tolerably abundant in the marshes of the Guadalquivir, it is almost, if not quite, extinct in those of Valencia, where it was formerly very numerous; in the marshes of the island of Majorca its numbers are also sadly diminished." Mr. A. von Homeyer, in his notes on the ornithology of the Balearic Isles, says (J. f. O. 1862, p. 430) that it breeds but rarely on Majorca, and he only twice met with it, once at the Prat and once at Albufera, but he never observed it on the island of Minorca. It is stated, he says, to be commoner in Majorca in winter than in summer. In Italy it is recorded as a straggler in the districts of Nice, Liguria, and Tuscany; and it is tolerably abundant in Sicily, especially in the marshes of the Anapo and about Lentini. It also occurs in Sardinia, being common some years and rare in others. It is stated by Temminck to occur in Greece and the Ionian Islands; but the authors who have written on Greek ornithology do not appear to have met with it, and Dr. Krüper states that nothing is known respecting its occurrence there of late years. Nor do I find any mention made of its occurrence in South-eastern Germany, the Danubian Principalities, or Turkey; but it is met with in Southern Russia. Professor Von Nordmann states that he never saw it alive, but that he knows that many have been obtained at the mouth of the Kouban; and Pallas speaks of it as being not rare on the

Terek. I find no record of its occurrence in Asia Minor; and as regards its presence in North-east Africa, although Von Heuglin states that he never saw it in Egypt, Captain Shelley writes (B. of Egypt, p. 277) as follows:—"The present species is abundant in the Fayoom, where I have frequently shot it, but have never met with it elsewhere in Egypt, although it is probably plentiful also in some of the lakes of Lower Egypt." In his description, however, Captain Shelley states that the back and scapulars are green, from which it would appear that his specimens are referable to *P. smaragdonotus* and not to the present species; and Mr. J. H. Gurney, jun., informs me that he never obtained *P. veterum* in Egypt, but only *P. smaragdonotus*. In North-west Africa it appears to be common, and breeds in Algeria and near Tangier. Loche states that it is resident on the large lakes of Algeria, such as Halloula and Fezzara; and Canon Tristram says that though scarce at Tuggurt it is far more abundant on the northern lakes. Favier states (*fide* Colonel Irby, *l. c.*), it is "chiefly migratory and not common near Tangier, passing north during the months of February and March, and returning in December and October. They are occasionally to be seen during the month of January, but not every year."

To the eastward the present species does not appear to range much, if any, further than the Caspian. Gmelin says that it was found by him commonly throughout Persia, and especially numerous on the reed-covered shores of the Caspian, where it is resident; but neither Mr. Blanford nor Major St. John met with it in Persia.

In habits the present species is said to resemble the common Coot. It frequents, like that species, the borders of lakes and marshy places which are covered with a dense vegetation, where it hides and is difficult to observe. Colonel Irby says (*l. c.*), "it is a very difficult bird to flush without a dog; when they do rise they make a flapping noise, and with a heavy flight merely take refuge in the nearest thick patch of rushes or wet sedgy jungle, whence, from being Crake-like in their habits, it is almost impossible to make them rise a second time. They are not to be met with, except among thick wet rushes. Some are to be found in a few places at the edge of the marismas of the Guadalquivir." Lord Lilford, who found it by no means rare in the marshes near Catania, says that it seldom appears in the open water, and haunts the highest and strongest reed-brakes, where it is difficult and often impossible to shove a boat along. Malherbe says that it feeds on roots, aquatic plants, and cereals, when in a wild state, but when in captivity it will eat almost any thing. Its note is deep and loud; and in general habits it is shy and timid.

It breeds late in March or in April, building a nest which resembles that of the Coot, amongst the dense aquatic vegetation. Colonel Irby says that in Spain the eggs are deposited towards the end of April; and Lord Lilford writes (Ibis, 1875, p. 15) as follows:—"I found one nest of this bird exactly resembling, and not conspicuously larger than, that of our Waterhen, which is extremely abundant here. This nest was placed on the water in a thick mass of growing flags, and contained one egg; this was on March 31st." Canon Tristram compares the nest to that of the Coot, and says that he never found more than four eggs in one sitting; but Favier states that near Tangier the present species breeds in April, and deposits from three to five eggs. The eggs, of which I possess specimens from Algeria, are warm stone-ochreous in colour, marked with violet-grey shell-blotches and deep brownish red surface-spots, which are tolerably generally scattered over the surface of the shell. In size they average about $2\frac{3}{40}$ by $1\frac{17}{40}$ inch.

According to Colonel Irby, the present species feeds entirely on vegetable substances; for he says that the gizzards of all those he examined contained nothing but vegetable matter (grass, seeds of rushes, &c.) with a good deal of coarse gravel; but it is stated to suck the eggs of other species and also to destroy young birds. Mr. O. Salvin writes (Ibis, 1859, p. 361) as follows:—"It is, I believe, in the habit of destroying the Ducks' nests whenever it can get an opportunity. Many a time did we leave a nest for the satisfactory determination of the species to which it belonged, and return to find every egg broken and sucked out. It may be calumny to ascribe these depredations to *P. hyacinthinus*; but I strongly suspect the charge is not unfounded." Canon Tristram also states that when in Algeria he saw one in the yard of General Ussuf seize a young duckling in its huge foot and crush its head with its bill, after which it ate the brains, and left the rest of the carcass untouched.

The specimen figured, on the same Plate with *Porphyrio smaragdonotus*, is the adult bird above described, and is in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Andalucia, Spain (*H. Saunders*). *b*. Near Seville, Spain (*Llanos*). *c*, ♂. Casa Vieja, Southern Spain, October 28th, 1871 (*Colonel Irby*).

*E Mus. Howard Saunders.*

*a*, ♂. Playa de la Resina, Andalucia, from nest with three eggs, April 24th, 1868 (*H. S.*). *b*, ♀. Near Seville, May 1870. *c*, ♂. Seville, October. *d*, ♂. Albufera de Valencia, September. *e*, ♀ *juv.* Near Seville, June 24th, 1869.



J.G.Keulemans lith.

M.& N.Hanhart imp.

GREEN-BACKED GALLINULE.

PORPHYRIO SMARAGNOTUS.

# PORPHYRIO SMARAGNOTUS.

(GREEN-BACKED GALLINULE.)

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*Porphyrio*, Briss. Orn. v. p. 522 (1760).
*Fulica porphyrio*, Linn. Syst. Nat. i. p. 258 (1766).
*La Talêve de Madagascar*, D'Aubent. Pl. Enl. 810 (1770).
*Gallinula porphyrio* (Linn.), Lath. Ind. Orn. ii. p. 768 (1790).
*Porphyrio smaragnotus*, Temm. Man. d'Orn. ii. p. 700 (1820).
*Porphyrio chlorynotus*, Vieil. Enc. Méthod. p. 1050 (1823).
*Porphyrio erythropus*, Steph. in Shaw's Gen. Zool. xii. p. 255 (1824).
*Porphyrio madagascariensis*, Gray, Gen. of B. iii. p. 598 (1845).
*Porphyrio chloronotus* (Vieill.), A. Brehm, J. f. Orn. 1853, Extrah. p. 103.
*Porphyrio smaragdonotus*, Licht. Nomencl. Av. p. 97 (1854).
*Porphyrio smaragdotus*, Bolle, J. f. Orn. 1856, p. 166.
*Porphyrio aegyptiacus*, Heugl. Syst. Uebers. p. 65. no. 672 (1856).

*Figura unica.*

D'Aubenton, Pl. Enl. 810.

♂ *ad. Porphyrioni veterum* similis, sed dorso viridi nec cæruleo facile distinguendus: rostro rubro-sanguineo: iride rubrâ: pedibus rubro-carneis.

♀ *ad.* mari similis sed paullo minor.

*Adult Male* (Fayoom, 7th June). Differs in plumage from *Porphyrio veterum* only in having the back rich dark bluish green instead of dark blue; frontal plate and bill bright sealing-wax-red; iris deep lake red; legs dark flesh-red. Total length about 18 inches, gape 1·7, wing 10·4, tail 4·35, tarsus 3·85, middle toe with claw 4·9, claw 1·0.

*Adult Female.* Undistinguishable from the male in plumage, but, if any thing, a trifle less in size.

This southern representative of the Purple Gallinule, differing in having the back green instead of blue, is only found, on the north side of the Mediterranean, as an extremely rare straggler. Baron J. W. von Müller records its occurrence in the south of France, and states that a peasant brought to him six specimens alive, which he said he had caught near the sea-coast; but it is quite possible that these were birds escaped from confinement. Salvadori, however, says that there are two examples in the Museum of Turin, originally catalogued under the name of *Porphyrio hyacinthinus*, one of which was sent from Sardinia by Signor Prunner on the 29th November, 1820, and the other, which was also said to have come from that island, lived for some years in the Royal Park at Stupinigi, and died there in 1849. Subsequently the King of Italy received several of these birds, said to have come from Sicily; and one of these was, in 1872,

alive in the Royal Park at Mandria, near Turin. Professor Doderlein, however, in spite of every effort, has not yet had the good fortune to obtain this Gallinule on that island.

On the south side of the Mediterranean, however, throughout Africa, as far south as the Cape of Good Hope, the present species is very generally distributed, entirely taking the place of the European Purple Gallinule. It is said by Von Heuglin to inhabit the lagoons of Lower Egypt in large numbers, and is especially numerous on Lake Menzaleh, where it arrives early in April and leaves in September or early in October. Dr. Hartmann, however, believes that he saw it as late as November on the Mareotis lake. It appears probable that Captain Shelley has confused the present species with *Porphyrio veterum* in his account of this latter species in Egypt, as pointed out by Mr. J. H. Gurney, jun., who says (Ramb. Nat. p. 186) that he first made its acquaintance at the Fayoom, where it was frequently to be seen stalking about among the reeds at the mouth of the Bar-el-Wady canal. M. Filliponi states that it was once common at Damietta, where it is now rare. It does not appear to occur in Algeria; but is found in Senegal. Plessing obtained it at Keta, on the Slave Coast; Anchieta at Benguela; and Andersson says (B. of Damara Land, p. 325), it "is rather scarce in Damara and Great Namaqua Land, but is pretty abundant in the lake-regions and on the rivers Teonghe and Okavango; it is also not uncommon during the rainy season in Ondonga, where the inhabitants call it 'King of the Waterhens,' and declare that the moment it utters its deep guttural notes every Waterhen within hearing immediately responds by its own peculiar cry. The only spot in Damara Land proper where I found this species at all common, was the great reedy marsh of Omanbondé; but there it was very timid, and consequently most difficult to approach. It seldom ventured into the open, but would warily skirt the dense reedy recesses which formed its favourite haunts, and into which it would precipitately retreat on the slightest sign of danger. At Lake Ngami and on the river Botletlé I found it less difficult to obtain, probably on account of its greater abundance." Mr. E. L. Layard says it is "generally distributed throughout the Cape colony, frequenting vleys and large ponds." Mr. Ayres says (Ibis, 1868, p. 469) that it "is found, though not abundantly, in the more extensive swamps and lagoons in the colony of Natal, and seems to be pretty generally distributed." Fornasini and Peters record it from Mossambique; Newton from Mauritius; and although Mr. J. H. Gurney says that the Madagascar bird differs from the species found on the continent of Africa, yet, judging from a specimen I have examined from there, I cannot see that it should be held to be specifically different; and Professor Schlegel and Messrs. Finsch and Hartlaub do not grant specific rank to the Madagascar bird. Mr. J. H. Gurney states (Ibis, 1868, p. 470) that the Madagascar bird has a longer and more powerful bill, and also a longer tarsus and larger foot; and he gives the difference in measurements of adult males as follows:—

| | Length of maxilla along tomia. | Height of maxilla at nostril. | Length of tarsus. | Length of middle toe with claw. |
|---|---|---|---|---|
| *P. madagascariensis* . . . . | 1·625 | 0·625 | 3·625 | 4·75 |
| *P. smaragnotus* . . . . . | 1·375 | 0·5 | 3·125 | 4·25 |

inches; but, as will be seen from my description, the bird I have figured, which was obtained in Egypt, has both the tarsus and middle toe longer even than in the Madagascar examples referred to by Mr. Gurney.

In habits the present species closely resembles *P. veterum*. Von Heuglin says that it frequents the flooded rice-fields in pairs, or else is found in dense high reeds, where, however, there are open places here and there; but it is quite indifferent as to whether the water is fresh or brackish. Each pair has its own special district, where they brook no intruder. During the daytime it is usually found in the dense thickets of aquatic herbage, where it either rests, usually standing on one foot, or else moves about in search of its food, which consists of cereals, seeds of various sorts, especially of aquatic plants, shoots of grasses, water-insects, snails, and frogs; and it also feeds largely on the eggs of other birds. When moving about, its carriage is erect, and it frequently jerks its head and tail. It walks slowly with measured steps, the long toes being held carelessly drooped downwards; and it glides through the dense masses of aquatic herbage, and climbs about amongst them, with ease and elegance. Its flight resembles that of the Waterhen, being short, low, direct, and fluttering, and, as it rises, noisy. It swims well, and early in the morning and in the dusk of the evening is generally seen in open places on the water; but at the least sign of danger it takes refuge amongst the dense reeds. During the night its loud, somewhat deep, clarinet-like note is frequently heard. Mr. Ayres also writes respecting this species (*l. c.*) as follows:—"These birds generally remain amongst the high rushes and reeds; but during the winter, in the mornings and evenings, they often leave their cover to catch the first and last rays of the sun, and they are then frequently to be found perched on a clump of rushes or reeds; they make many extraordinary noises, most unmusical and quaint. Their food consists of the inner and soft parts of the shoots of reeds and of other water-plants; these may be found in their stomachs chopped up like chaff by their powerful bills, which no doubt are expressly provided for peeling off the outer bark and hard parts of the plants they feed upon." I am indebted to Mr. J. H. Gurney, jun., for the following notes:—"When the sun has reached its meridian this *Porphyrio* stalks slowly out of the waving reeds; or sometimes in the cool of the early morning his dark form is seen for an instant pressing the covert as he betakes himself to its friendly shelter, not with an undignified haste, but with a slow and steady gait, which bends the tall reeds as he passes between them. Not often can he be roused into greater activity, knowing well what an easy mark his great body presents. Seldom have I seen one quit the safe mud to risk even a short flight of a few yards; and never that I remember, though doubtless able to swim, did one trust himself to the water; but in the morning or at midday, solemnly marching over the scarce-covered shallows, they seek their aquatic food, like a great overgrown hen, and yet with no ungraceful bending of the body, usually venturing to about twenty paces distance from the reeds of safety, seldom more. I have seen it sitting silent and solitary at the great lake near Cairo, the lake of the Fayoom, where it receives the waters of the canal Bar-Joseph. It may be found on the opposite shore, though I never saw it there; but the oppressive heat we had in June, when the thermometer stood at 100°, was a check to collecting, and our searches on the great lake were so limited that these birds may easily have been in that dense fringe of water-jungle without our knowing it. Should any future collectors visit the province of Fayoom a sharp look-out should be kept for the Purple-backed *Porphyrio*, the allied species of Europe, whose presence in the land of Ham, asserted more than once, still needs corroboration. That it should occur there is not unlikely; but of the six specimens which I have examined, five had unmistakably green backs, and the sixth, which was alive in a backyard

at Cairo, I omitted to take note of. Like other species of this genus they are easily domesticated, preserve their health well, and by their graceful nodding gait and brilliant tints are thought to form a pleasing addition to a menagerie. It is probable that, as the Romans of old kept an allied species in a domesticated state, the Egyptians may have done the same and made a sacred pet of *Porphyrio smaragnotus*; but I never discovered among the hieroglyphics at Edfou or the cartoons at Beni-Hassen one that I could pronounce to be a portrait of it. That much remains to be done in this department I am sure; and a thorough scrutiny of the monuments would in all likelihood reveal this and a good many other species. These Gallinules have been credited with a carnivorous propensity; but the examples of *P. smaragnotus* which I have some years kept alive have never shown a symptom of it, though this may be only because they are supplied with food more to their taste. Some Purple Gallinules (*P. veterum*) belonging to my father used to amuse us by lifting to their mouths single grains of barley between their attenuated toes; but they have been dead some years, and the habit is not inherited by their successors."

But little is known respecting the nidification of the present species; and I have never been fortunate enough to procure its eggs, which doubtless resemble those of *Porphyrio veterum*; for Mr. E. L. Layard says (B. of S. Afr. p. 341) that in the Cape colony "it breeds amongst reeds, forming a large nest of sedge, and depositing from six to ten eggs of a ruddy brown, spotted with dark purple-brown; axis 2″ 2‴, diam. 1″ 6‴."

In the article on *Porphyrio veterum* I stated that that bird and the present species would be figured on the same Plate; but on finding that the size would have to be too much reduced, I decided on figuring them separately.

The specimen of the present species figured is the one above described, and is in the collection of Mr. J. H. Gurney, jun.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, ad.* South Africa (*Burton*).

*E Mus. H. B. Tristram.*

*a.* Natal (*Ayres*). *b.* Madagascar (*Gerrard*).

*E Mus. J. H. Gurney, jun.*

*a, ♂ ad.* Fayoom, Egypt, June 7th (*J. H. G., jun.*).



J. & A. Leidemans lith

Hanhart imp

ALLEN'S GALLINULE.

PORPHYRIO ALLENI.

# PORPHYRIO ALLENI.

(ALLEN'S GALLINULE.)

*Porphyrio alleni*, T. R. H. Thompson, Ann. & Mag. Nat. Hist. x. p. 204 (1842).
*Gallinula porphyrio*, Temminck, in Mus. Lugd.
*Gallinula mutabilis*, Sundevall, Öfv. Vet.-Ak. Handl. p. 152 (1850).
"*Gallinula porphyrio*, Temm.," Hartl. J. f. Orn. 1855, p. 357.
*Hydrionia porphyrio* (Temm.), Bp. Compt. Rend. xliii. p. 599 (1856).
*Cesarornis alleni* (Thomps.), Bp. ut suprà (1856).
*Hydrornia porphyrio* (Temm.), Hartl. Orn. Westafr. p. 243 (1857).
*Porphyrio variegatus*, A. Guirao, Cat. Aves de la Prov. de Murcia, p. 42, pl. 2 (1859).
*Porphyrio minutus*, Heugl. J. f. Orn. 1863, p. 169.
*Gallinula alleni* (Thomps.), Schlegel, Mus. Pays-Bas, *Ralli*, p. 38 (1865).
*Hydrornia alleni* (Thomps.), Salvad. Fauna d'Italia, Uccelli, p. 233 (1872).
*Porphyrio-Gallinula alleni* (Thomps.), Savi, Orn. Tosc. ii. p. 422 (1874).

*Figuræ notabiles.*

Giglioli, Icon. Avif. Ital. fasc. ii.; G. R. Gray Gen. of B. iii. pl. to p. 589; Guirao, *l. c.*

*Ad.* pileo, nuchâ et capitis lateribus fuliginoso-nigris vix cæruleo tinctis: collo postico et corpore suprà saturatè olivaceo viridi tinctis; remigibus et rectricibus nigricantibus saturatè cæruleo tinctis: tectricibus alarum saturatè turcino-cæruleis vix viridi tinctis: gulâ et corpore subtùs saturatè turcino-cæruleis, abdomine imo et tibiis nigricanti-cæruleis: subcaudalibus exterioribus albis: iride fusco-rubrâ: rostro et pedibus miniatis, scutellâ frontali pallidè viridi.

*Juv.* pileo, nuchâ et collo postico fulvescenti-cervinis, capitis lateribus pallidioribus: dorso, scapularibus et secundariis intimis saturatè umbrinis conspicuè fulvo-ochraceo marginatis: uropygio sordidè umbrino viridi-cyaneo tincto: supracaudalibus dorso concoloribus sed angustiùs marginatis: remigibus fuscis, extùs sordidè viridi-cyaneo marginatis: tectricibus alarum dorso concoloribus sed vix viridi tinctis: mento, gulâ et abdomine centraliter albis: gulâ imâ, colli lateribus, pectore et hypochondriis fulvo-ochraceis, subcaudalibus magis rufescentibus: tibiis ferè omnino cæruleo-nigris: rostro et scutellâ frontali rufescenti-corneis: iride pallidè fuscâ: pedibus pallidè rufescenti-fuscis.

*Adult Male* (river Niger, August 1859). Crown, nape, and sides of the head black with an indigo-blue tinge; hind neck, back, and upper parts generally deep olivaceous glossed with dark parrot-green; quills and tail blackish tinged with deep cobalt-blue, the wing-coverts cobalt-blue with a greenish tinge; throat and underparts generally deep blue becoming blackish on the lower abdomen and thighs; under tail-coverts, except the lowest layer, pure white; iris rich brownish red; bill and legs scarlet; frontal plate pea-green. Total length about 10 inches, culmen 1·1, wing 5·75, tail 2·75, tarsus 2·05, middle toe with claw 2·6, middle claw 0·6.

*Young Female* (Alexandria, 27th November 1867). Crown, nape, and hind neck warm sandy brown with a

rufous tinge, the sides of the head paler; back, scapulars, and inner secondaries deep umber-brown broadly margined with warm clay-ochreous; rump dull umber-brown slightly tinged with greenish blue; upper tail-coverts and tail like the back, but with narrow margins; quills brown, externally margined with dull bluish green; wing-coverts like the back, but faintly tinged with greenish; chin, upper throat, and centre of the breast and abdomen white; lower throat, sides of neck, breast, and flanks warm ochreous clay, which becomes rather more rufous on the under tail-coverts; thighs to a large extent bluish black; bill and frontal plate reddish horn; iris light brown; legs pale reddish brown. Culmen 1·1, wing 5·75, tail 2·65, tarsus 2·05, middle toe with claw 2·55, middle claw 0·55.

The tropical portions of Africa appear to be the true home of this species, whence it very rarely straggles into the Palæarctic Region; but it has been met with often enough to render it necessary to include it in the present work. The first recorded occurrence in Europe appears to be that of a specimen which was obtained near Lucca in the autumn of 1857, and sent to Professor Savi in the flesh, and is now in the Pisa Museum. Since then it has occurred a second time, also in the Lucca district, a specimen having been procured near Massaciuoli on the 20th December 1874 by Count G. Ottolini, who presented it to the Museum attached to the College of Lucca, whence it passed into the national collection at Florence. Dr. Giglioli, who figured this specimen, says that from the state of its plumage it is evident that it was a wild bird, and not one escaped from captivity. It has lately transpired that this Gallinule has also been obtained in Spain as far back as 1854, and was recorded and figured by Don Angel Guirao, under the name of *Porphyrio variegatus*. This gentleman, who (*l. c.*) gives a detailed description and an excellent plate of this specimen, states that it was obtained in the neighbourhood of the great lake on the south-east coast of Spain known as the "Mar menor," in the autumn of 1854. Referring to this specimen, Mr. Howard Saunders writes to me as follows:—"Although I had for years been acquainted with Guirao's plate, the bird therein represented was so evidently a young *Porphyrio* that for long it never occurred to me to verify the dimensions given and to ascertain if they agreed with the Purple Gallinule. When I did this and found how small a bird it was, it at once occurred to me that it must be the young of Allen's Gallinule; and when in Spain last May I visited the Museum at Madrid, whither Don Angel Guirao had sent all his rarer birds, and examined the specimen in question, which is, I am sure, an immature *Porphyrio alleni* just acquiring some of the greenish feathers of the adult."

In Africa this Gallinule ranges tolerably far south, though it does not appear to reach the Cape colony. I possess an immature example, purchased in the market of Alexandria by the late Mr. S. Stafford Allen; Hedenborg and Von Heuglin met with it on the White Nile; and the latter, who obtained it on the Bahr-el-ghazel and the swamps of the Reg lake, adds that it occurs sparingly in Abyssinia. I do not find any record of its occurrence in North-west Africa; but it has been obtained on the Gold Coast and in Senegal. Mr. R. B. Sharpe states (Ibis, 1870, p. 488) that one was sent to Mr. Swanzy from Fantee; Reichenow obtained it in the Camaroon delta; Thompson recorded it from the Niger; Du Chaillu procured it on the Camma river, Monteiro at Pembe; and Professor Barboza du Bocage says that it inhabits Loango and Angola. The late Mr. C. J. Andersson also sent home two examples, shot on the 5th February 1867 at Ondonga, where, he adds, it was evidently scarce.

I may here mention that, according to Vernon Harcourt, it occurs in Madeira, though

Mr. Godman does not include it in his list of the resident and migratory birds of that island. On the east side of the African continent Allen's Gallinule has been recorded from the Zambesi, from Mozambique by Peters, and from Madagascar, where Professor Newton shot one on the 9th September in some bullrushes near the mouth of the Hivondrona.

In habits Allen's Gallinule is said to resemble closely the common Water-hen, *Gallinula chloropus*—more closely, perhaps, than it does any of the true Porphyrios. Von Heuglin met with it in North-east Africa, where, he says, the localities it frequents he only visited between the months of February and April, and cannot, therefore, decide whether it is resident or not; but he adds (Orn. N.O.-Afr. p. 1229), "In its general habits it is a true Water-hen. Its favourite resorts are the dense reed and papyrus thickets near canals and watercourses where rushes are abundant. During the daytime it remains hidden in the dense aquatic herbage, and amongst the thick growth of the *Herminieria*; but at evening and morning and during moonlight nights one may see straggling pairs swimming about on the open water just like *Gallinula chloropus*, picking up insects and diving about. This Gallinule feeds on aquatic plants and their seeds, worms, spawn, and probably also small fish. It climbs about amongst the dense reed thickets with ease, and sometimes carries its food to its bill with its long toes. In the morning and evening its harsh call-note is not unfrequently heard. It is not easy to shoot, on account of the difficult ground it frequents; and wounded birds are easily lost. During the twilight I often succeeded in driving one into the low rushes, where I could then tread it out. Its flight is fluttering and laboured."

Professor Barboza du Bocage says (J. f. Orn. 1876, p. 299) that "it utters its call-note when submerged in the water except its head; its voice resembles that of a human being; and as soon as one bird utters its call, all the rest join in the chorus."

The adult specimen figured is one lent to me by Canon Tristram, and is the bird above described; the young bird, being the only one I possess, was given to me by the late Mr. S. Stafford Allen, who purchased it in the flesh in the market at Alexandria.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀ *juv.* Alexandria Market, November 27th, 1867 (*S. Stafford Allen*).

*E Mus. H. B. Tristram.*

*a*, ♂ *ad.* River Niger, August 1859.

## Genus GALLINULA.

*Gallinula*, Brisson, Orn. vi. p. 3 (1760).
*Fulica* apud Linnæus, Syst. Nat. i. p. 258 (1766).
*Hydrogallina* apud Lacépède, Mém. de l'Inst. iii. p. 518. an ix. (1801).
*Rallus* apud Savi, Orn. Tosc. ii. p. 382 (1829).
*Stagnicola* apud C. L. Brehm, Vög. Deutschl. p. 704 (1831).

This genus is represented in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, only one species, however, being found in the Western Palæarctic Region.

They frequent marshes, ponds, streams, &c. where the cover is dense and they can find ample opportunities for concealment. They are, as a rule, not shy, but are wary, and seek shelter in the dense reed-thickets directly danger threatens. They swim with ease, sitting very lightly on the water, and dive equally well, often remaining concealed under the water with only the bill above the surface to enable them to breathe. They walk with tolerable ease, and climb about amongst the reeds with great facility, and sometimes perch on a stump or the trunk of a tree near the water-side. Their flight is heavy and laboured, unless they have risen to a considerable altitude, when they fly tolerably well. Their call-note is loud, and is frequently uttered at night when they are on the wing. They feed on aquatic insects, worms, snails, &c., as also on vegetable substances, such as seeds, tender shoots, &c. They make a somewhat bulky nest of reeds and grasses, which is placed amongst the aquatic herbage near the water, or rarely on a tree; and they deposit numerous clay-yellow eggs, marked and blotched with violet-grey and reddish brown.

*Gallinula chloropus*, the type of the genus, has the bill about as long as the head, moderately stout, compressed, tapering, slightly higher than broad at the base; frontal shield oblong, tumid; nostrils linear-oblong, median, submarginal; wings rather short, concave, rounded, the first quill about equal to the fifth, the second and third longest; tail soft, short, rounded; legs large, the lower part of the tibia bare; tarsus stout, scutellate; toes very long, slender; the claws long, slender, compressed, slightly curved, acute.



A. de Lemans lith.

Hanhart imp.

MOORHEN.

GALLINULA CHLOROPUS

# GALLINULA CHLOROPUS.

(MOORHEN.)

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*Gallinula*, Briss. Orn. vi. p. 3, pl. 1 (1760).
*Fulica chloropus*, Linn. Syst. Nat. i. p. 258 (1766).
*Fulica fusca*, Linn. tom. cit. p. 257 (1766).
*La Poule d'eau*, Buff. Hist. Nat. Ois. viii. p. 171, pl. xv. (1781).
*Gallinula chloropus* (L.), Lath. Ind. Orn. p. 770 (1790).
*Gallinula fusca* (L.), Lath. op. cit. p. 771 (1790).
*Rallus chloropus* (L.), Savi, Orn. Tosc. ii. p. 382 (1829).
*Stagnicola septentrionalis*, C. L. Brehm, Vög. Deutschl. p. 704 (1831).
*Gallinula fusca*, C. L. Brehm, op. cit. p. 705 (1831).
*Gallinula flavipes*, C. L. Brehm, ut suprà (1831).
*Gallinula fistulans*, C. L. Brehm, ut suprà (1831).
*Stagnicola chloropus* (L.), C. L. Brehm, op. cit. p. 706 (1831).
*Stagnicola minor*, C. L. Brehm, ut suprà (1831).
*Stagnicola parvifrons*, C. L. Brehm, Vogelfang, p. 331 (1855).

*Cearc-uisge*, Gaelic; *Poule d'eau*, French; *Gallinha de agua*, Portuguese; *Gallinella d'acqua*, Italian; *Gallotz prim*, Maltese; *Zelga-kahal*, Moorish; *grünfüssiges Teichhuhn*, *Wasserhuhn*, German; *Waterhoentje*, Dutch; *Rödblisset Rörhöna*, Danish; *Grönbenet Sumphöne*, Norwegian; *Grönfotad Sumphöna*, Swedish; *Kamischnitza*, *bolotnaïa-Kouritza*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 877; Werner, Atlas, *Gralles*, pl. 38; Kjærb. Orn. Dan. taf. 38, Suppl. taf. 18; Frisch, Vög. Deutschl. taf. 209; Fritsch, Vög. Eur. taf. 35. figs. 1, 2; Naumann, Vög. Deutschl. taf. 240; Sundevall, Svensk. Fogl. pl. 45. fig. 4; Gould, B. of Eur. pl. 342; id. B. of G. Brit. iv. pl. 85; Schlegel, Vog. Nederl. pls. 252, 253; Bettoni, Ucc. Lomb. pl. 96.

♂ *ad.* capite et collo saturatè cæruleo-schistaceis: dorso et tectricibus alarum olivaceo-fuscis: remigibus et rectricibus saturatè fuscis, alis angustè albo marginatis et remige extimo extùs albo marginato: corpore subtùs griseo-schistaceo, abdomine imo magis griseo, hypochondriis conspicuè albo striatis: subcaudalibus albis, centraliter nigris: rostro ad basin et fronte calvâ rubris, apice rostri flavo: iride rufâ: pedibus viridibus, armillis rubris.

♀ mari similis sed major et coloribus vividioribus.

*Adult Female* (Hampstead, 28th April). Head, neck, and fore part of the back deep greyish slate-blue; underparts generally rather lighter and greyer; back, wing-coverts, and rump deep olivaceous brown; quills and tail dark brown, edge of the wing and a narrow margin to the first quill pure white; lower abdomen

greyish white; proximal under tail-coverts white with a deep black tuft in the centre; flanks marked with long white stripes; basal portion of the bill and frontal plate bright red, the front of the bill yellow; iris red; legs dull green with a red garter above the tibio-tarsal joint. Total length about 13 inches, culmen with frontal plate 1·34, wing 6·7, tail 2·95, tarsus 1·85.

*Adult Male.* Resembles the female; but in a series I find that the males run smaller in size and a trifle duller in colour.

*Young.* Crown, sides of the head, and hind neck olive-brown, the sides of the neck similar, but tinged with grey; lores whitish; chin and throat white; lower throat and underparts dark ash-grey, the feathers tipped with white; lower abdomen rusty grey; the under tail-coverts washed with rusty yellowish; upper parts dull olive-brown; quills dark brown, the inner ones margined with olivaceous brown; bill dull yellowish green with an olivaceous tinge, the frontal plate very small; legs very dull greenish.

*Young in down* (Norfolk). Covered with hair-like blackish sooty down; bill and the frontal bare spot red; the sides of the head blue, and the chin and upper throat with white points to the down; legs dark greyish, almost blackish grey; iris greyish brown.

The Moorhen, or common Gallinule, is very generally distributed throughout Europe up to about 60° N. lat., being a migrant in the upper portion of the zone it inhabits, and a resident in some of the other portions. In Asia, Africa, and America there are very closely allied forms which scarcely deserve specific rank, respecting which closer details are given below; but specimens from all parts of the Western Palæarctic Region do not differ appreciably *inter se*.

In Great Britain the present species is resident and very generally distributed, and breeds in suitable localities from the extreme south up to the extreme north, the Outer Hebrides, and Orkney.

In Ireland, as in England, the Moorhen is found throughout the country. It does not visit Greenland or Iceland; and Captain Feilden states that it is only an uncertain wanderer to Færoe, where Müller records its occurrence in December 1845, February 1854, and in June 1860. According to Mr. Collett it breeds here and there on the coasts of Norway, but is nowhere numerous. Its nest has been discovered near Stavanger, at Etne in Hardanger; and it has been observed in the breeding-season on the Trondhjems fiord. One was shot at Bergen in 1870; and individuals have been obtained at Bodö in 1828, at Christiansand, at Skien, in December 1862, and at Christiania in November 1866. Nilsson speaks of it as being a comparatively rare bird in Sweden, where it arrives in April, and leaves in September or October, and is found in Skåne as well as in Upper Sweden. It breeds in several parts of Skåne and near Gothenburg. On one occasion only has it been obtained in Finland, in 1842, when one was captured in Kyrkslätt parish, Nyland, and passed into the hands of the late Magnus von Wright, who placed it in the Finnish collection at Helsingfors. In Russia it does not range far north. Mr. Sabanäeff informs me that it has once occurred in the Jaroslaf Government, and it breeds in the south-eastern portion of Vologda. It is not rare in the Moscow Government; and Bogdanoff says that it is found along the Volga, and in small numbers in the Kazan Government; and Artzibascheff records it as being common in reedy districts on the Sarpa, where it breeds. In Poland, Mr. Taczanowski writes, it is everywhere common, arriving in March and remaining to the end of

October. In North Germany, according to Borggreve it is less numerous in the east than in the west, and is much rarer in the flat coast districts of Pomerania than, for instance, in Westphalia. It arrives in Denmark late in April or early in May, and leaves again for the south in August or September. Mr. Collin states (Skand. Fugle, p. 555) that it breeds not uncommonly throughout the country, as for instance on Möen, at Traneskjær, at Gedsör, on Falster, at Sorö, and Ourebygaard, according to Boie in the duchies; and Mecklenburg found it breeding in Schleswig, and Grill at Skaarup, in the Odense districts, and at Margaard. It is also met with occasionally on Bornholm. The Moorhen is found in Heligoland on passage in April and May, and from the end of August to the 15th of September, but so rarely that Mr. Gätke says one cannot count on three in each successive year. In Western Germany the Moorhen is common in suitable localities; but Mr. Sachse informs me that near Altenkirchen it is rather rare than otherwise, as there are so few ponds, but when it does occur it is generally found nesting. In Holland, Belgium, and France it is very common, being, as a rule, a migrant; but a few remain during the winter, especially in mild seasons. In Spain it is resident; Colonel Irby says (Orn. Str. Gibr. p. 144), "it is not so common in Andalucia as the Spotted Crake (*Porzana maruetta*); but I was unable to detect any migratory habits on the Spanish side of the Straits, where it is tolerably plentiful and generally distributed in all suitable localities, often being seen about the gardens at the edge of the small stream at Algeciraz and at Vejer, seeming, as in England, to be fond of living in the vicinity of houses and cultivation. They nest about the end of April." In all parts of Southern Europe, Italy, Sicily, Sardinia, Greece, the Ionian Islands, &c. it is resident and numerous; but in Southern Germany, in districts where the ponds are covered with ice in the winter, it migrates southward, returning again soon after the ice breaks up. In Malta, however, according to Mr. C. A. Wright, it is only met with on passage in March and April, or early in May, and again in September. Lord Lilford, writing to me respecting the Moorhen, says:—"It is abundant in almost all parts of Europe suited to its habits that I have visited, especially in the great marshes of Epirus and in Sicily. I have several times observed young birds of the first brood assisting their parents in building a second nest. A pair of these birds bred and reared six young in my aviary at Lilford in the summer of 1876. I look upon the Waterhen as an enemy to the game-preserver, not only from the quantity of Pheasant-food which it devours, but from the fact that it will attack, kill, and eat young birds of all sorts. The bird is a great favourite of mine, and I should be sorry to encourage its destruction; but I am persuaded that it is a dangerous neighbour to young game birds."

In Asia Minor and Palestine it is also found at all seasons of the year; and in Egypt, Captain Shelley writes (B. of Egypt, p. 275), it is very plentiful in some parts of Lower Egypt and the Fayoom; but he did not meet with it elsewhere there, though it probably ranges through the country. In Algeria and near Tangier it is numerous and resident, though many are migratory; and, according to Mr. F. DuCane Godman, it inhabits the eastern group of the Azores, Madeira, and the Canaries. On the mainland of Africa the Moorhen is found (subject to slight variation, as below stated) down to the Cape of Good Hope; and it breeds also in South Africa in February and March.

In Asia our European Moorhen abounds in the Caspian provinces, and is not uncommon

about the rivers and marshes of Southern Persia, where Major St. John met with it. As in Africa, specimens from Asia, and especially those from the Malay archipelago, vary from the common European form: and it is not easy to say how far east this latter ranges; but it appears to occur in India. Mr. A. O. Hume writes (Stray Feathers, i. p. 250), "the Waterhen abounds in every swamp and broad in Sindh. I shot some almost daily, expecting to get Blyth's *Gallinula burnesi*, especially at the Muncher lake, whence the type specimen was sent. I have killed and examined many examples; but all I met with were referable to the European species. I begin to have strong doubts as to whether *Gallinula burnesi* is not merely the immature *chloropus*." Subject to some variation, the Moorhen is found as far east as China and Japan, and south to the Philippines, Celebes, Java, Borneo, and Sumatra.

In America, should the form occurring there be, as I believe, not specifically distinct from our bird, it is to be met with from British North America down to Southern Brazil.

It is by no means easy to say whether the various forms of the Moorhen found in Asia, Africa, and America should be united with our European bird or kept specifically separate. In plumage they do not differ, except to a very slight degree in intensity of colour; the only appreciable difference is in measurements, more especially in the size and extent of the frontal plate. I have examined as many specimens as I could collect together from the British Museum and from the cabinets of Messrs. Salvin and Godman, Tristram, C. A. Wright, Howard Saunders, &c.; and the result shows that they vary as follows:—European examples do not differ greatly *inter se*, the measurements being—wing 6·5 to 7·1 inches, tarsus 1·78 to 2·1; and the frontal plate does not extend as far as the eye, not reaching to within 0·1 to 0·22 from a line drawn perpendicularly from the front of the eye. In Africa the European form appears to be the one found in the extreme north; but one from Lake Ashangi, in the British Museum, measures—wing 6·82, tarsus 1·8; and the frontal shield is rather larger than in any European example, reaching up to the anterior angle of the eye, and being broader and more swollen. Examples from West and South Africa, *Gallinula meridionalis* (*Stagnicola meridionalis*, C. L. Brehm, Vög. Deutschl. p. 707, 1831), measure—wing 6·05 to to 6·3, tarsus 1·75 to 1·82; and the frontal plate extends 0·15 to 0·28 beyond the anterior angle of the eye. Professor Newton has separated the Mauritius bird under the name of *Gallinula pyrrhorrhoa* (P. Z. S. 1861, p. 18), and states that it differs in having the frontal plate large, the under tail-coverts buff, and the legs yellow; and he further adds that its cry differs altogether from that of our bird. Besides Mauritius, this form inhabits the Mascarene Islands, Bourbon, and Madagascar.

Judging from the series I have examined from India, examples from that country differ very slightly from typical European birds, in having a shorter wing and a larger frontal plate. The measurements of those I have examined are:—wing 5·62 to 6·2 inches, in one specimen from Behar 6·6; tarsus 1·7 to 1·9; and the frontal plate, which in some reaches quite to the anterior angle of the eye, in others does not reach to within 0·15 to 0· inch of it; thus in every case this plate is larger than in European examples. A specimen from Yunnan which measures, wing 6·2 inches, tarsus 1·8, has, however, the frontal plate much bigger, extending fully 0·15 beyond the anterior angle of the eye. It would seem as if the European form occurred in India, and there met the eastern form, which has a larger frontal plate; and it seems not improbable that Blyth's *Gallinula parvifrons* (J. As. Soc. Beng. xii. p. 180, 1843) is our European Moorhen,

the larger-fronted Asiatic bird being *Gallinula orientalis*, Horsfield. Examples from the Philippines differ appreciably from our European bird in the size of the frontal plate, and closely resemble those from America, except that they have a shorter wing. One in the British Museum, stated to have come from Celebes (where, as a rule, *Gallinula hæmatopus*, Temm., alone occurs), measures—wing 5·75, tarsus 1·9, the frontal plate extending 0·12 beyond the anterior angle of the eye; and a female from Amparo (Philippines), in my own collection, measures—wing 6·4, tarsus 2·22, the frontal plate extending 0·28 beyond the angle of the eye.

The American form, *Gallinula galeata* (*Crex galeata*, Licht. Verz. Doubl. p. 80, 1823), assimilates to the South-Asiatic form in measurements to some extent; but, as a rule, the wing is longer in American examples. Unfortunately, however, I have no series of Indian and Malay-archipelago birds to compare, as there is only one in the British Museum from Celebes, and, owing to the sudden death of my co-worker, the Marquis of Tweeddale, I cannot at present make use of his rich collection, as I have hitherto done, and ere long shall be able to do again.

Examples from British North America are large in size; a male in my own collection, from Kingston, Ontario, measures—wing 7·4, tarsus 2·12, and the frontal plate extends 0·22 beyond the angle of the eye. One from Mexico measures—wing 6·8, tarsus 2·1, frontal plate 0·25 beyond the angle of the eye; and examples in the British Museum and the collection of Messrs. Salvin and Godman, from South America, vary in size as follows—wing 6·7 to 7·75, tarsus 1·95 to 2·3, the frontal plate extending from 0·15 to 0·3 beyond the angle of the eye; and in some this plate is very much swollen. The largest of these birds is a female from Southern Peru. In the British Museum are two examples from Trinidad, which have the frontal plate very large, and measure as follows—wing 6·6 and 6·8 inches, tarsus 1·92 and 2·0, the frontal plate extending 0·2 and 0·28 beyond the angle of the eye.

The series I have examined is not sufficiently extensive to enable me to decide whether these various forms should be treated as separate species or not; but I certainly incline to the latter view; for although the extremes, when compared, appear to be so very distinct, it seems almost impossible to draw a line of distinction anywhere between them.

The Moorhen (or Waterhen, as this bird is called in many localities) frequents marshes, ponds, streams, and large ditches where there is plenty of cover in the way of reeds, flags, and other aquatic plants, and where, when disturbed, it can find suitable shelter. When unmolested it is by no means shy, though it is cautious and wary; and when there is a large pond near or in pleasure-grounds, these birds get very tame towards people whom they see every day; but they are well able to discriminate between friends and strangers, a strange dog being recognized as a possible enemy at once, and most carefully avoided. I have often seen Moorhens helping themselves to the food placed out for poultry and ducks; and they are quite capable of taking care of themselves in case the poultry object to their presence. Although quiet and seemingly inoffensive in a general way, the Moorhen is by no means a peaceable bird as regards others of its own species; and it will, if possible, drive off any intruder who may invade its home, attacking even wild ducks and geese. A pair usually take possession of a small pond; or if the pond be sufficiently large, several pairs will be found there, each keeping to its own little district; and in the spring of the year many combats take place when the young birds are on the look-out for a suitable nesting-place. Usually the Moorhen is to be seen swimming about in the open places between

the aquatic vegetation, and less seldom wandering about on the dry land. It frequently dodges about amongst the reeds, and climbs amongst the densest herbage with ease, grasping the reeds or flags with its long toes. It frequently perches on a root-stump or trunk of a tree overhanging the water, and may be seen standing on one foot with its head drawn close in. It walks sedately, lifting its feet very high as it steps along; but if disturbed it throws its body forward and runs with great speed to the nearest shelter; and it is an adept in the art of concealing itself. Macgillivray, one of our best field-naturalists and observers, remarks:—"It is curious to observe with what facility it makes its escape in circumstances in which one might at first suppose it impossible for it to get off in security. Thus you may come upon one feeding in a narrow ditch filled with water. It instantly dives or flies off a short way; and when you run up to the place where it has just alighted, and think you are sure of it, you find no traces of its existence. Watch as long as you please, no bird makes its appearance; it has sunk, and concealed itself somewhere along the margin, and there it will remain, with nothing but its bill above the surface, until you have departed; for it would require an eye sharper than that of a lynx to discover it. Although, when accustomed to the molestation of man, it is very vigilant, easily alarmed, and always prepared for flight, it is less wary in remote and unfrequented places. In some of the rushy lakes of the islands of Harris and North Uist, I have found it easier to get within shooting-distance than in the mill-dams and streams of the lower districts of Scotland, where, should it observe you, even at a great distance, it is sure to be off instantly; and by the time you get to the place, it has concealed itself."

The Moorhen swims with ease, and sits very lightly on the water. It dives and swims under water, when pursued, with equal facility, propelling itself with its wings as well as with its feet. Its flight is feeble and laboured until it attains a considerable altitude, when it flies with tolerable speed. If it flies only a short distance, it flutters or flaps along heavily, its long legs dangling down, nearly touching the water, and its neck stretched forward. Its voice is loud, and may be heard at a considerable distance. Its call-note, which is often uttered in the evening when the bird calls its mate, resembles the syllables *crekrekrek*; and it utters a note also like the call of a frog. When on passage, and when flying, especially in the evening and at night, one hears its loud clear call *kickickick*, uttered now and again. The very young birds utter a rather querulous piping note when following their parents; but at the first appearance of danger they become as silent as possible.

The Moorhen feeds both on vegetable and animal substances. Water-insects of various kinds, small aquatic snails, coleoptera, worms, &c. appear to form its staple food; but it eats also the tender shoots of grasses, seeds of aquatic plants, and grain of various kinds. It seeks its food chiefly when swimming about, and but seldom on land, except early in the morning and late in the evening, when, after a shower of rain, it will search amongst the grass for worms, slugs, &c.

Both male and female assist in collecting together the necessary materials for the construction of the nest, which is commenced directly the vegetation begins to make progress—the time varying according to the mildness or severity of the season, from the middle of April to the middle of May. The nest is placed either amongst the aquatic herbage on the bank close to the edge of the water, amongst stumps or roots, or, though rarely, on a tree. Yarrell mentions

instances of its nest having been found on the branch of a fir tree, a few feet above the water, and on a branch which rested on the surface of deep still water, and in one instance on a spruce tree about twenty feet above the ground; but it only selects such places in exceptional cases, probably when there is a chance of the nest being swamped by an overflow of the water. The Moorhen is said even to remove its eggs and raise its nest should the water rise and threaten to overwhelm it; and Selby gives an instance of a pair of Moorhens having done this. The nest is a bulky structure of dried reeds and blades of grasses and aquatic plants, the inside cup being rather more carefully made of finer materials. The eggs, from six to nine or even ten in number, are pale rusty clay-yellow in ground-colour, marked more or less profusely with violet-grey shell-spots and reddish-brown surface-spots and blotches, and measure from $1\frac{23}{40}$ by $1\frac{8}{40}$ to $1\frac{27}{40}$ by $1\frac{9}{40}$ inch. The surface of the shell is smooth, but nearly devoid of gloss; and in shape the eggs are oval, slightly more pointed towards one end than towards the other. Incubation lasts from twenty to twenty-one days, both male and female birds taking their turn on the nest, though the female is said to sit always during the night, the male taking up his quarters for the night in close proximity. Two or even three broods are raised in the same season; and the young birds of the first brood will assist in bringing up those subsequently hatched.

The specimens figured, an adult female with the young birds in down dress, are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Hampstead, near London, April 28th, 1870 (*Davy*). *c, d, e, pulli.* Norfolk. *f*, ♂ *ad.* Albania (*Hanbury-Barclay*). *g.* Amparo, Philippines, July 1877 (*A. H. Everett*). *h*, ♂. Kingston, Ontario, 1873 (*A. R. Dresser*).

*E Mus. Brit. Reg.*

*a.* Avington, Hants, November 25th, 1872 (*E. Shelley*). *b.* Athens. *c*, ♂. Lake Ashangi, May 4th, 1868 (*Blanford*). *d.* Benguela (*Hartlaub*). *e.* Natal. *f.* Potchefstroom, South Africa (*Barratt*). *g, juv.* India. *h, i, juv., j, k, l, ad.* Nepal (*Hodgson*). *m.* Behar (*Hodgson*). *n.* Tenasserim (*Packman*). *o.* Thibet (*Earl Gifford*). *p.* Yunnan, June 1868 (*Dr. Anderson*). *q.* Celebes. *r, s.* Trinidad. *t.* Brazil. *u.* South America (*Turner*).

*E Mus. Salvin et Godman.*

*a.* Mexico. *b, c.* Dueñas, September 1862 (*O. Salvin*). *d*, ♀. Altiloquia, Columbia (*Salmon*). *e*, ♂. Costa Rica, 1869. *f.* Southern Peru, November 4th, 1867 (*Whitely*). *g*, ♂. Caçara, Brazil, April 12th, 1828.

*E Mus. C. A. Wright.*

*a.* Salini, Malta, May 1874 (*C. A. W.*).

*E Mus. Howard Saunders.*

*a*, ♀, *b, pull.* Malaga, Spain, July 9th, 1871. *b*, ♂. Tangier.

## Genus FULICA.

*Fulica*, Brisson, Orn. vi. p. 23 (1760).
*Lupha* apud Reichenbach, Natürl. Syst. p. xxi (1851).

The Coots inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, two species being resident in the Western Palæarctic Region. Like the birds belonging to the preceding genera, they frequent marshy and damp localities, usually lakes and ponds bordered with aquatic herbage. They pass most of their time swimming about on the open portions, so close, however, to cover that they can at once take shelter in case of need. Sometimes they may be seen wading about in shallow places; but they walk rather clumsily. They are companionable, and are often found in large flocks. They swim and dive extremely well; and their flight is tolerably good, though they rise with difficulty and splash along for some distance before they rise fairly into the air. Their call-note is clear and trumpet-like, and can be heard at a great distance. They feed on aquatic insects, seeds, tender shoots and buds, worms, shell-fish, &c., obtaining the last by diving. Their nests, which are placed either amongst the reeds and aquatic herbage or on the ground near the water, are bulky, constructed of dried flags, reeds, &c., and lined with finer materials; and their eggs, which are numerous, are yellowish grey, tolerably closely dotted and marked with blackish brown.

*Fulica atra*, the type of the genus, has the bill nearly as long as the head, stout, tapering, compressed, the ridges of the upper mandible narrow, enlarged at the base into an elliptical tumid plate, which extends beyond the eyes; nasal groove large; the nostrils submedian, linear-oblong; wings short, rounded, the first quill much shorter than the second, which is longest, the third being about equally long; tail soft, short, rounded; feet large, tibia bare for a short distance; tarsus strong, compressed, scutellate; toes long, slender, scutellate above, flat beneath, edged with broad scalloped membranes; claws long, slender, slightly curved, compressed, acute.




H. Leemans lith.

1. CRESTED COOT.
FULICA CRISTATA.
2. COMMON COOT.
FULICA ATRA

Hanhart imp

# FULICA CRISTATA.

(CRESTED COOT.)

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*La grande Foulque à crête*, Buff. Hist. Nat. Ois. viii. p. 222 (1781).
*Fulica cristata*, Gmel. Syst. Nat. i. p. 704 (1788).
*Fulica mitrata*, Licht. Nomencl. Av. p. 97 (1854).
*Lupha cristata*, Reich. Natürl. Syst. taf. 187. fig. 1090.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 797; Naumannia, 1856, pl. 2; Bree, B. of Europe, pl. to p. 83.

*Ad. Fulicæ atræ* similis sed alis haud albido terminatis, cristâ in clypeo supremo duplicâ incarnato-rubrâ, iride castaneo-rubrâ: rostro et pedibus sicut in *Fulicâ atrâ* coloratis.

*Adult Female* (Lake Halloula, Algeria, May 1856). Entire head and neck sooty black; upper parts generally slaty black; wings and tail brownish black, without any white on them; underparts paler than the upper parts, being more of a dark greyish slate; beak and frontal shield white, the latter terminating in two conspicuous red knobs; legs ashy white; iris reddish brown. Total length about 16 inches, culmen 1·3, gape 1·4, wing 8·0, tail 2·6, tarsus 2·55.

*Adult Male* (Natal). Does not differ from the female above described, except that the frontal knobs are, perhaps, a little smaller.

*Young* (Malaga). Much paler than the adult; the feathers on the underparts are tipped with greyish, as are also those on the chin and neck; the frontal shield is but little developed, the knobs are very small; and the bill is evidently dark in colour, and not white.

More especially an African bird, being found in suitable localities almost throughout that continent, the Crested Coot is to be met with but rarely north of the Mediterranean. It is recorded by Professor Barboza du Bocage as found in Portugal, where, though less abundant than *Fulica atra*, it is well known; and it occurs also in Spain. I have seen specimens obtained at the Albufera, near Valencia; and Mr. Howard Saunders, who states (Ibis, 1871, p. 225) that it appears there in winter, adds that it breeds in the "marisma" near Madre del Rocio, in Andalucia, where he saw it and obtained identified eggs. According to Colonel Irby it doubtless occurs further east than Andalucia; for he saw specimens at Granada marked as Spanish. M. Degland remarks (Orn. Eur. ii. p. 283) that one was killed early in 1841 on the marsh of Marignan, near Marseilles, and is, or was, in the collection of M. Montvalon, jun.

Mr. A. von Homeyer found it breeding in the Balearic Isles, where, he says, it is less numerous than the Purple Gallinule. He saw several stuffed specimens, which the owners seemed to value but little; and on the 15th of May he observed several quite young birds with the old female, and had an opportunity of watching the former quite closely.

Count Salvadori writes (Ucc. d'Ital. p. 237) that it occurs very rarely in Italy: one was procured in Liguria; and another, now in the University Museum at Pisa, was purchased in the market of that town. In Sardinia it is said to be tolerably common, but appears, Mr. A. B. Brooke says, more abundantly some winters than in others; and in Sicily, according to Malherbe, it has been obtained on the Anapus; but Salvadori says that it is stated to have been met with on the lakes in the southern portions of that island. I have examined a fine specimen shot in Malta by Mr. C. A. Wright in May 1859; and he says that he was informed by Dr. Gulia that three were shot at Marsa Scala in February 1860. It does not appear to have been observed in Greece, Turkey, or Asia Minor; but Captain Shelley writes (B. of Egypt, p. 278):—This Coot "appears to be plentiful at times in Egypt, and extends, I believe, throughout Nubia. I never met with a specimen while in the country; but a resident informed me that they are abundant during the inundations." Von Heuglin says that he found the Crested Coot in considerable numbers late in April and early in May on Lake Tana, in Abyssinia; Lefebvre obtained one in May in Enderta; and Blanford writes that he met with it in tolerable abundance on Lake Ashangi.

In North-western Africa this Coot appears to be even more abundant than on the eastern side. Canon Tristram found it breeding numerously on Lake Halloula, in Algeria, where he never met with the common Coot (though it certainly occurs there in the winter with its congener); and he believes that each species confines itself to its own nesting-places. Thus, in the lakes he visited in Eastern Algeria the following summer, while *Fulica atra* abounded, *Fulica cristata* never once came under his observation. Near Tangier, Favier says (*fide* Colonel Irby), it is both resident and migratory. Those which migrate return from the north in September. It associates with *Fulica atra*, but is much more numerous than that species. Lord Lilford informs me that he "met with it in the Regency of Tunis, where it was pretty common on the lakes and lagoons in the early winter of 1856."

It probably ranges right down the west coast of Africa, though there are many intermediate localities, which have been well worked by collectors, whence it has not been recorded. Professor Barboza du Bocage states that it occurs on the Rio Coroca. Mr. Andersson says that it is common, in suitable localities, in Damara and Great Namaqua Land, and more abundant in the lake regions; and Mr. E. L. Layard writes (B. of S. Afr. p. 343), in the Cape colony it "is abundant on all ponds and sheets of water. It also frequents deep holes and still reaches in rivers, concealing itself amid the herbage during the day, and feeding morning and evening about the banks. It wanders at these times several hundred yards from its lair, and on being alarmed scuttles away on its feet, aided by its wings, until, a sufficient impetus being attained, it rises in the air, and will not unfrequently fly a very long distance. It swims well and boldly; and I have seen it alight on the waters of Table Bay and breast a considerable sea. It constructs a nest of sedge, usually floating among the rushes, and lays seven eggs." Mr. F. A. Barratt states (Ibis, 1876, p. 213) that this Coot is by no means rare in the Lydenburg district. Towards the mouth of the Mooi river, near the Vaal, he found them in great abundance, and shot specimens a few hours' north of Pretoria. Mr. Ayres and Mr. T. E. Buckley obtained it in the Transvaal, and the former in Natal, where, however, it is less numerous than in the Transvaal; and both

Dr. Hartlaub and Mr. E. Newton state that it is found in Madagascar, being, according to Mr. Caldwell, Mr. Newton adds, common near the capital.

I have not had the good fortune to see this Coot in a wild state, and am therefore obliged to collect information respecting its habits from the writings of those naturalists who have visited its haunts in Africa. Almost all who have seen it wild agree in saying that it does not differ in habits from *Fulica atra*; but Mr. A. von Homeyer, who met with it in the Balearic Isles, says (J. f. O. 1862, p. 430) that, when on the water, it bears more resemblance to *Gallinula chloropus* than to *Fulica atra*, as also in the localities it selects for its habitat; for it does not evince so great a preference for large sheets of water, but is seen chiefly in swamps and ponds. Referring to its habits as observed by him in North Africa, Von Heuglin says that it is usually found in colonies in the shallow, reedy, and flag-covered portions of the larger lakes in the Abyssinian highlands, at an altitude of from 6000 to 9000 feet. In still weather these Coots are to be seen on open places in the lakes tolerably far from the shore; but wind or waves drive them directly into the shelter of the reeds. They feed on insects and their larvæ, spawn, shells, small fish, and aquatic plants. They appear to be migratory; for he never saw any on Lake Tana in February or March; but it is possible that they had withdrawn to more inaccessible localities than those they at other times inhabited. They always avoid running water. When wounded they take to the land and hide amongst the roots and tangled brushwood on the shores. Mr. Andersson says (B. of Damara Land, p. 327) that "these Coots may often be observed congregated in large numbers on open sheets of water, where they might easily be mistaken for a flock of Ducks, except that they do not 'pack' like wildfowl. If disturbed, they will sometimes, if near a reedy brake, seek safety by hiding there; but more frequently they have recourse to their wings, when they exhibit great powers of flight." In Natal, according to Mr. Ayres (Ibis, 1868, p. 470) the Crested Coots are "very shy, and maintain a flight for a length of time, examining their ground well before realighting; but in the Transvaal they seem to trust more to hiding and diving for their safety, and, when flushed, fly but a short distance. Frequently have I stood up to my middle in water listening to some cunning old bird within a few yards of me, and vainly trying to catch a glimpse of him, where there was not enough cover, apparently, to hide a rat. Either these birds must possess the power of ventriloquism, or they must remain under water with perhaps just their bills out; one thing is certain, that they are expert divers."

The nest and eggs of this Coot closely resemble those of *Fulica atra*. Canon Tristram says that the eggs run rather larger than those of the common Coot; but this is scarcely the case as regards South-African examples. The nest is placed on little openings in artificial mounds, or among the stumps of old reed-clumps, and is tolerably well constructed of reeds and grasses. In Damara Land, Mr. Andersson says, these Coots "build their nests of and amongst reeds, rushes, and grasses, usually selecting the most retired spots, though I have also found their nests in most exposed situations. A few old reed-stalks serve as a footing for the nest, which is roughly but firmly constructed, and is raised, though sometimes only a few inches, above the surface of the water." It breeds very numerously in some parts of South Africa; for Mr. Gurney remarks (Ibis, 1868, p. 261) that "Mr. Ayres, in travelling from Natal to Potchefstroom in the month of December, found this Coot breeding so abundantly on the larger lagoons that he and his com-

panion collected six hundred of its eggs in a single day. Most of the nests contained from three to five eggs each."

The specimen figured, on the same Plate with *Fulica atra*, is a very fine male lent to me by Canon Tristram.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, ad.* N. Africa. *b, juv.* Malaga, Spain, July 30th, 1876 (*Schlüter*).

*E Mus. H. B. Tristram.*

*a*, ♀. Lake Halloula, Algeria, May 7th, 1856 (*H. B. T.*). *b*. Cape of Good Hope (*E. L. Layard*). *c*, ♂. Natal (*T. Ayres*).

*E Mus. C. A. Wright.*

*a, ad.* Quarantine Harbour, Malta, May 1859 (*C. A. W.*).

# FULICA ATRA.

(COMMON COOT.)

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*Fulica*, Briss. Orn. vi. p. 23, pl. ii. fig. 1 (1760).
*Fulica major*, Briss. tom. cit. p. 28, pl. ii. fig. 2 (1760).
*Fulica atra*, Linn. Syst. Nat. i. p. 257 (1766).
*Fulica aterrima*, Linn. tom. cit. p. 258 (1766).
*Fulica fuliginosa*, Scop. Ann. i. Hist. Nat. p. 104. no. 150 (1769).
?*Fulica albiventris*, Scop. tom. cit. p. 105. no. 151 (1769).
*La Foulque*, Buff. Hist. Nat. Ois. viii. p. 211, pl. xviii. (1781).
*La Macroule*, Buff. tom. cit. p. 220 (1781).
*Fulica leucoryx*, Sparrm. Mus. Carls. pl. 12 (1786).
*Fulica æthiops*, Sparrm. op. cit. pl. 13 (1786).
*Fulica atrata*, Pall. Zoogr. Rosso-As. ii. p. 158 (1811).
*Fulica pullata*, Pall. tom. cit. p. 159 (1811).
*Fulica platyuros*, C. L. Brehm, Vög. Deutsch. p. 711 (1831).
*Fulica lugubris*, Sal. Müll. Verh. Natuurl. Gesch. Nederl. Bezitt. iii. p. 454 (1839–44).
*Fulica australis*, Gould, Proc. Zool. Soc. 1845, p. 2.
*Fulica atra japonica*, Temm. & Schl. Fauna Japonica, *Aves*, p. 120, pl. 77 (1850).
*Fulica cinereicollis*, MacClelland, fide Gieb. Thes. Orn. ii. p. 211 (1875).

*Foulque noire*, *Macroule*, French; *Galeirão*, Portuguese; *Mancon*, *Focha*, Spanish; *Folaga*, Italian; *Figiega-tal-Bahar*, Maltese; *Ghorra*, Arabic; *el Ghor*, Moorish; *Wasserhuhn*, *Blässhuhn*, German; *Meerkoet*, Dutch; *Blishöne*, *Blisand*, *Bliskaw*, Danish; *Sjouhona*, Færoese; *Blisshöne*, Norwegian; *Sothöna*, *Vattenhöna*, Swedish; *Nokikana*, Finnish; *Lisska*, *Lissiona*, *Lisupa-chernaya*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 197; Werner, Atlas, *Pinnatipèdes*, pl. 1; Kjærb. Orn. Dan. taf. 38, Suppl. taf. 18; Frisch, Vög. Deutschl. taf. 208; Fritsch, Vög. Eur. taf. 35. fig. 6; Naumann, Vög. Deutschl. taf. 241; Sundevall, Svensk. Fogl. pl. 45. fig. 5; Gould, B. of Eur. pl. 338; id. B. of G. Brit. iv. pl. 84; id. B. of Austr. vi. pl. 74; Schlegel, Vog. Nederl. pl. 251; Temm. & Schl. Fauna Japon. pl. 77; Bettoni, Ucc. Lomb. pl. 74.

*Ad.* capite et collo nigris vix schistaceo tinctis: dorso, scapularibus et alis suprà nigricanti-schistaceis: remigibus secundariis albo terminatis, alis extùs albo marginatis: corpore subtùs griseo-schistaceo, crissâ et subcaudalibus nigris: rostro et fronte calvâ cæruleo-albis: iride rubrâ: pedibus cæruleo-albis: tibiis aurantiacis.

*Juv.* sordidior: capite et collo albido striatis, mento fere albo: corpore subtùs sordidè griseo-schistaceo, plumis griseo-albo terminatis.

2

*Adult Male* (Leadenhall Market, May). Head and neck slaty black; back slaty black, but rather paler than the head; wings and tail coloured like the back; but the short secondaries are tipped with white, and the edge of the wing is white; underparts generally dark slaty blue-grey; under tail-coverts blackish slate; bill and frontal plate bluish white; legs bluish grey, the bare part of the tibia orange; iris deep red. Total length about 16 inches, culmen including the frontal plate 2·05, gape 1·45, wing 8·2, tail 2·2, tarsus 2·25, middle toe with claw 3·55.

*Adult Female.* Resembles the male, but is smaller, and the colours of the plumage are less pure in tint.

*Young* (Ural, 1868). Upper parts duller and paler than in the adult, the head and neck marked with small white dashes; chin nearly white; underparts dull light slate, most of the feathers with greyish white tips; crissum and under tail-coverts black.

*Young in down.* Covered with close hair-like slaty-black down tipped with white; frontal membrane red; bill red at the base, and white towards the tip; legs dull lead-grey; iris brownish yellow.

*Obs.* According to Mr. J. H. Gurney, jun., when the bird begins to emerge from the down into the first feather-plumage, the breast, fore part of the neck, and the chin are pure white; but I have not had an opportunity of examining a specimen in this stage of plumage.

The common Coot is very generally distributed throughout Europe, and ranges southward into Central Africa, being, however, replaced in the Cape colony by *Fulica cristata*. In Asia it is found as far east as Japan, and south to Australia.

With us in Great Britain it is a common and resident species, being generally distributed throughout the whole of the United Kingdom, though less numerous in some than in other localities. In England it is to be met with in almost every county in suitable localities. Mr. Stevenson writes (B. of Norf. p. 425) that, "though an abundant species in Norfolk, it is not so generally distributed as *Gallinula chloropus*, preferring the open waters of the broads and meres, extensive lakes, and large reedy ponds to the smaller coverts that content the more familiar Water-Hen. Except in close vicinity to the broads themselves, it is seldom seen on our rivers; but in the neighbourhood of Surlingham and Rockland, on the Yare, its peculiar cry may be heard from the deep sedgy ponds; and in the wilder portions of the Bure and the Ant, winding their sluggish course through the very heart of the 'broad' district, this bird abounds in the reedy borders, and is heard and seen at every bend of the stream. It is plentiful, also, in the fen districts, both to the south and south-west of the county; and a few breed annually in more central localities, such as Scoulton Mere, the haunt of the Black-headed Gulls, and on such of the meres about Wretham as afford sufficient harbour. Even Foulmere, though but a short distance from a farm-house, with all the busy sounds of human habitation, has attractions for this species, in a belt of rushes at one end of the water—but not so Ringmere or Longmere, though situated on a still wilder portion of Wretham heath. A few, I believe, are also to be met with in summer amongst the reeds on the salt marshes about Salthouse and Cley; but freshwater localities are almost invariably preferred in the nesting-season, when, in the same neighbourhood, they regularly frequent the ponds at Hempstead, near Holt, and in one part, in close vicinity to a water-mill, in spite of the constant noise of the flushes." In the Humber district, according to Mr. Cordeaux, it is less numerous than it used formerly to be, and

is now confined to only a few favourite localities; but in Northumberland and Durham it breeds, Mr. Hancock says, in most large pools and loughs, as at Wallington and Gosforth, and it nested quite commonly at Prestwick Car before that district was drained.

In Scotland, Mr. Robert Gray writes (B. of W. of Scotl. p. 338), "though less numerous than the Moor-Hen, it appears to have an equally wide distribution, being found from north to south over the whole of Scotland, and from east to west to the Long Island or Outer Hebrides. It is common throughout the inner islands, breeding in suitable places, where the two species are found in company. Islay, Skye, and Mull are frequented by considerable numbers. In a few of these localities it is migratory, leaving its breeding-haunts about the commencement of winter; numbers, however, remain all the year. A single pair only has been observed in Benbecula, but it is more common in North and South Uist, as well as Harris and Lewis. One of the Benbecula birds was killed some years ago; but the survivor, after a short absence, returned with another mate, probably from one of the neighbouring islands." It breeds in Orkney, but seldom visits Shetland, and then only in winter.

In Ireland, Thompson writes (B. of Irel. ii. p. 332), the Coot "is permanently resident, and breeds in suitable localities throughout the island, which are chiefly lakes, either in wild and sequestered places or in game-preserved demesnes, having abundance of herbage about their borders. Lough Beg, near Toome (Antrim), Lough Achery, and the lakes in Hillsborough Park (Down), the lake in Lord Lurgan's demesne (Armagh) may be named as a few of the breeding-haunts in the north-east of the island, in all quarters of which the bird has come under my notice, and nowhere so abundantly in summer as on the river Shannon, northward of Lough Derg."

Though it has not been observed in Greenland (where, it is worthy of notice, the American Coot has occurred), it has been recorded from Iceland. Faber states that a pair were killed at Reykjavik late in 1819, and one was caught at sea off Gundavik in April 1821. Professor Newton, who possesses one which was killed near Utskala, mentions that he is not aware that it has been seen anywhere in Iceland, except in the south-west. In the Færoes the Coot is tolerably well known as a spring and autumn visitant; and in Norway, Mr. Collett informs me, it is found singly in almost all parts of the country, and breeds in certain localities, in the lower tracts bordering on the Christiania fjord, for instance, where it is observed every year. On several occasions individuals have been noticed in the middle of the winter; an example (swimming in the Trondhjems fjord) was killed early in January 1871. One or two individuals were observed in Finmark, near Vardo (70° 20′), in the autumn of 1857. According to Professor Nilsson it arrives in Sweden in April or late in March, and breeds commonly in Southern and Central Sweden. It is very numerous near Gothenburg and Carlstad, and is found here and there near Upsala. It breeds on the Glan lake, in Östergöthland, but becomes much rarer further north. In Finland, according to Dr. Palmén, it is only of somewhat rare occurrence, but it breeds in the south-western districts. It seldom ranges above 61° N. lat.; but Sadelin states that it has been obtained near Wasa.

In Central Russia it is generally distributed, and is common in the Tver Government. Bogdanoff remarks that it is abundant along the Volga; and Kessler says the same respecting its presence in the Kieff Government. As a rule, it is most numerous in the south and south-

eastern Governments; and Artzibascheff says that it is very abundant on some of the lakes of the Sarpa. In the Ural it is said to be rare. In Poland, according to Mr. Taczanowski, it is common, and generally distributed, arriving in March and leaving late in October; and throughout North Germany it is also common.

In Denmark, Mr. Benzon informs me, the Coot is extremely numerous, and breeds in all suitable localities throughout the country. Although it is much persecuted on account of the injury it is said to do to the Wild-Duck shooting, it does not seem to decrease in numbers.

It is a summer visitant to Belgium, and breeds numerously in Polders and the marshes of Flanders and the Campine, as also in many parts of Holland. According to MM. Degland and Gerbe it is common in some parts of France, and only met with on passage in others. It breeds in many of the departments in Central, Southern, Eastern, and Northern France. In Portugal it is numerous, as also in Spain, especially in the winter, when it is seen in large flocks. It breeds, Colonel Irby says, at the Laguna de la Janda in April. Lord Lilford writes to me:—"The common Coot abounds in Andalucia, and breeds in the marisma of the Guadalquivir; it is also very common on the Albufera of Valencia. I found it in thousands upon the great lagoons of Sardinia and Corsica, in which localities some remain to breed also; but the great masses of these birds arrive there at the beginning of winter. I may here mention that the great *chasse aux macreuses* described by Yarrell as taking place in the étangs of Provence and Corsica refers to *this* bird, and *not*, as he supposes, to the Scoter, which is a comparatively rare bird in the Mediterranean; the mistake is a natural one, as the name *macreuse*, though properly belonging, and applied in Northern France, to the Scoter, is the only name for the Coot in the south of that country, where this species is not recognized by its proper designation of *foulque*."

In Italy, according to Salvadori, it is not very common, and is more numerous in the winter than in the summer. Malherbe writes that it is only tolerably abundant and resident in Sicily, in the Lake of Lentini, the marshes of Catania, the Anapus, the Cyane, near Syracuse, and, indeed, on all the rivers and marshes of that island, where they collect in large flocks in the winter. In Sardinia, Mr. A. B. Brooke writes (Ibis, 1873, p. 336), the Coot is "extremely abundant during winter, going in large flocks of several hundreds on the different lagoons round Cagliari and Oristano. By far the greater number migrate; but a few remain and breed." In Malta, Mr. Wright says, it is "common in spring and autumn, more particular in the latter season, when it begins to appear about the middle of August, and is seen till November." Lord Lilford writes to me, "it is very common in winter on the lakes of Epirus, in which country I have several times observed the singular manner in which a flock of these birds defend themselves against the White-tailed Eagle. On the appearance over them of one of these birds, they collect in a dense body, and when the Eagle stoops at them they throw up a sheet of water with their feet and completely baffle their enemy; in one instance, on a small lake near Butrinto, they so drenched the Eagle that it was with difficulty that he reached a tree on the shore, not more than a hundred yards from the spot where he attacked them. They seemed to take very little notice of the Spotted Eagles, Harriers, Buzzards, &c., but on the appearance of Bonelli's Eagle would scatter off to the covert of the reeds with which most of the lakes are thickly fringed. I never, however, observed any bird of prey attack them except the White-tailed

Eagle and Peregrine Falcon, which latter would occasionally cut one down as they flew over the land. The Coot has of late years become very common upon the Nene, in Northamptonshire, where it was formerly rare." In Greece it winters in vast numbers, and is said to be especially numerous in the Bay of Missolonghi and on the lakes of Vrachori. Probably a few remain to breed there; but Dr. Krüper did not succeed in finding its nest.

In Southern Germany it is very generally distributed, and common in most localities. Dr. Fritsch says that in 1857 as many as 5162 Coots were shot in Bohemia. It is a migrant in most parts, passing south to winter. I find but few details respecting its presence in the Black Sea and Turkey, where it is said to be by no means uncommon; it is also pretty generally distributed in Asia Minor, where it breeds; for Von Gonzenbach obtained its eggs near Smyrna. In Palestine, Canon Tristram says, it is common and resident, and it is generally distributed throughout North Africa. Captain Shelley says that it is met with in all suitable localities in Egypt and Nubia; and Mr. J. H. Gurney, jun., remarks that at Lake Menzaleh he saw such multitudes as he could not have believed possible. Vierthaler states that he noticed it on the Blue Nile; and Dr. A. E. Brehm shot one there on the 30th November. It is found in wet localities throughout North-west Africa. Mr. Salvin writes that it is common at Zana, Djendeli, and Bizerta, in none of which places did he observe the Crested Coot; and, according to Canon Tristram, it frequents the vicinity of Tuggurt. Near Tangier, Favier says (*fide* Colonel Irby), it is resident, but not very numerous, often consorting with *Fulica cristata*. Some are migratory, passing northwards in January and February, and returning in August and September; and Colonel Irby himself found it abundant near Tetuan in March.

It inhabits the Azores, Madeira, and the Canaries. Mr. Godman states that it is to be met with in St. Michael's, on the Lagoa do Fogo, and adds that he believes they were originally introduced into the islands. In the Canaries, according to Dr. C. Bolle, it appears every winter, and is by no means uncommon at Teneriffe, Canaria, and Fuerteventura; and when touching at Madeira, in October, he saw one offered for sale by a lad who had caught it with the hand. On the mainland of Africa the Coot ranges, according to Lichtenstein, down to Senegambia and the Cape of Good Hope; but though it may possibly straggle as far south as the former locality, I scarcely think that it can ever have been obtained in the Cape colony, where it appears to be entirely replaced by *Fulica cristata*.

In Asia the Coot is found right across the continent. It inhabits suitable localities near the Caspian, in Persia, and throughout India. In Sindh it is very numerous; for Mr. A. O. Hume writes (Stray Feathers, i. p. 249):—"On the Muncher lake I believe they would have to be counted not by thousands but by hundreds of thousands; a square mile of water may be seen perfectly black with waterfowl; and although ducks of various descriptions do seem innumerable, they form scarcely one tenth of the floating herd, the great bulk of which consists of Coots. When a shot is fired near to them and they rise, the noise of their wings, and of their feet striking the water, is like the roar of the sea upon a shingly beach. You can shoot nothing without knocking over some of these wretched Coots. During the day I was at the Muncher lake, I never once fired at one, and yet I daily killed between twenty and thirty accidentally in shooting at ducks. In no part of the world have I ever seen such incredible multitudes of Coots as are met with in Sindh; in the Muncher lake *par excellence*, but also in many others of

the larger inland pieces of water." According to Dr. Jerdon (B. of India, ii. p. 716), it is common in most parts of India, but rare, or wanting, in some localities which seem perfectly adapted for it. Dr. Henderson found it breeding in the lakes of Cashmere in May and June; but it was not numerous; after the Zoji-lá Pass was crossed, it was only again seen in the Indus, near Lé. In Eastern Turkestan, Mr. Scully writes (Stray Feathers, iv. p. 191), it is "exceedingly common in the plains of Kashgharia from March to October; very few of the birds are to be seen during the winter. It is found on all lakes and jheels, often near springs and small streams. When alarmed it scuds across the water, seldom flying up, but flapping the surface of the water until it can hide among the rushes; it is also a wonderfully good diver. This species breeds, in Turkestan, in May, June, and July. On the 10th June, the nest of a Coot, containing seven eggs, was found at Sughuchak."

In Siberia the Coot does not reach very far north. Dr. Radde found it breeding at Kulussutajeffsk. On the 25th May he obtained it at Ust-Schilka; and it was not rare at an altitude of 2500 to 3000 feet in the Eastern Sajan range. It first appeared at Tarei-nor on the 3rd April, and on the 3rd May it became more numerous. In the central Irkut valley he first observed it in 1859 on the 5th May. Von Schrenck says that it occurs throughout the Amoor, as he procured it both from the mouth and the head-waters of that river; but Von Middendorff did not meet with it. In Mongolia, Colonel Przevalsky met with it at Dalai-nor, on passage, in April, and found it breeding on the marshy lakes in the Hoang-ho valley. It arrived at Lake Hanka in April, and breeds there numerously; but he says that it does not inhabit Kan-su, Koko-nor, and Halha. Père David states that it is common during the summer throughout the centre and north of China to Mantchuria, and it is also found in Japan.

Southward the Coot ranges as far as Australia. Mr. Wardlaw Ramsay obtained it (I may here state) in Burmah; there are specimens in the Leiden Museum from Java; and in Australia, Mr. Gould says, it frequents the inland waters and saltwater lagoons near the coast.

The Coot has been by many authors separated into several subspecies; but I cannot deem it advisable to recognize these, and therefore treat all the Old-World forms as belonging to the same species.

Temminck and Schlegel (Fauna Japonica, p. 121) state that there are four races of the Coot, differing only in size, viz.:—the European Coot, which measures—wing 7 inches 8 lines, tail 2·4, tarsus 2·3, middle toe without claw 3·0, beak in length 1·5½, in height 0·6½; the Japanese Coot, measuring—wing 7 inches 4 lines, tail 2·3, tarsus 2·0, middle toe 2·9, length of beak 1·2, height of beak 0·6; the Indian Coot, measuring—wing 7·0, tail 2·0, tarsus 1·11, middle toe 2·8, length of beak 1·2, height of beak 0·5⅔; and the Javan Coot, measuring—wing 6·5, tail 1·11, tarsus 1·10, middle toe 2·3, length of beak 1·2, height of beak 0·5⅓.

In the British Museum are specimens from Europe, North Africa, India, and Australia, which I have examined and measured, but do not find Temminck and Schlegel's statement confirmed. European examples measure—wing 7·65 to 8·2 inches, gape 1·4 to 1·5, tarsus 2·15 to 2·25; one from Tunis measures—wing 7·7, gape 1·4, tarsus 2·1; specimens from India, Thibet, and Yarkand measure—wing 7·65 to 7·95, gape 1·2 to 1·5, tarsus 1·95 to 2·33; and those from Australia vary as follows—wing 7·3 to 7·5, gape 1·25 to 1·35, tarsus 1·9 to 2·25. The Australian Coot has the bill rather more slender than the others; but I find the variation in the frontal shield so

irregular that it cannot fairly be taken into consideration. In plumage there does not appear to be any difference in the specimens from the various localities.

In North America the present species is replaced by *Fulica americana*, which may at once be distinguished by having the lateral under tail-coverts white.

In the northern portions of its range the Coot is a migrant, leaving for the south at the approach of winter; but in the south it is a resident, or merely changes its habitat according as it finds it necessary to obtain a good supply of suitable food. It frequents marshes, pools, and lakes which are overgrown with or skirted by reeds, sedge, water-lilies, or other aquatic plants, amongst which it can find secure hiding-places should danger threaten. It is generally to be seen swimming, if it feels itself quite safe, out in the open water, or otherwise close to or amongst the reeds, and but seldom coming on shore to open places, though it often wades about in wet marshy places which are well covered with aquatic herbage. On land it is but an awkward-looking bird; for its legs being placed far aft it is compelled to walk very erect, and its feet, though excellently adapted for swimming, render its progress on land rather clumsy; but it runs almost as well as the Moorhen, and with tolerable ease when disturbed and forced to run to shelter. On the water it floats very buoyantly, and swims with ease, though not very swiftly, jerking its tail and moving its neck to and fro. It dives extremely well, and when closely pursued will pass along some distance under the water, and then, catching hold of the stem of a stout plant, will keep its body immersed, the bill and fore part of the head to the eyes only being left above the surface. Exceedingly shy and wary, it is by no means an easy bird to get near; and it is well able to distinguish between any one who is likely to injure it and any harmless individual; for it appears to disregard fishermen or children, even when in tolerably close proximity, whereas any suspicious-looking person, especially any one carrying a gun, is most scrupulously and carefully avoided. Being extremely companionable, and usually found in smaller or larger parties, or during the winter in vast swarms, it is the more difficult to approach, as some of the party are sure to be on the alert, and not only alarm their comrades, but any other waterfowl that may be in the vicinity. When it takes wing it does not at once swing itself into the air, but rises at a very low angle, splashing the water for some distance with its wings and feet. Its call-note is a clear, loud, almost trumpet-like cry, uttered abruptly; but heard at night, when several are calling, it is not unlike the shrill barking of a small dog.

The food of the Coot consists of aquatic insects of various kinds, seeds, buds, and tender shoots of aquatic plants, small shell-fish, &c. &c. Mr. Noll states (J. f. O. 1864, p. 394) that he has seen the Coot dive and pick shells from the bottom of a pond, place them on the bank, or on a patch of water-plants, open them at the hinder end and extract the contents, leaving the empty shells behind. He surprised one in the act of doing this, and found a quantity of empty broken shells, mostly of *Anodonta ponderosa*, and one of *Unio tumidus*, which had evidently been quite recently fished up from the bottom, as the outside of the shell was moist and the animal still alive. In this shell the larger end had already been pecked and broken into.

The Coot often feeds at night as well as by day; and in Egypt, where it is often found in vast swarms, the fishermen net many by night. Mr. J. H. Gurney, jun., who gives a good account of this mode of catching Coot (Rambl. Nat. pp. 94, 95), says that a party of four or five

Coot-catchers will sometimes take as many as 150 in a night, and that in Damietta a fat Coot sells for a shilling and a thin one for a franc.

The nest of the Coot is a large heavy structure, composed of decayed reeds, flags, and other aquatic herbage, and is placed amongst reeds or willows, or else in shallow water, when it is built up to a considerable height; sometimes, but not often, it is placed on the land, generally amongst grass or herbage; and it is, as a rule, well concealed, though occasionally tolerably easy to find. Referring to the nidification of this bird, Mr. Stevenson writes (*l. c.*) as follows:—"The nests, which vary somewhat according to their situation, are all more or less compactly made, large in size, and composed of coarse materials so firmly interwoven that Mr. Hewitson states he has found them capable of supporting his weight. The outside of this ingeniously formed basket usually consists of dried flags, reeds, and other withered plants; but I have occasionally known young reeds and rushes used in part, when the contrast of the fresh green has had a very pretty effect. The interior is lined with rather finer substances, chiefly with portions of the dead leaves of the reed. Though not unfrequently placed in dry situations, on the sedgy bank of an island, or the rushy margin of a pond or lake, I have more commonly found them, on the broads, built over the water amongst the reed-stems, in shallow spots resting on the weeds at the bottom, in others well raised over the surface, but so fastened to the reeds themselves as to rise with the tide, though with but little danger of their getting adrift. When thus placed amongst the outlying reeds or rushes growing half out of the water, the nest is rather conspicuous; and I have never found the eggs in any way covered; indeed, under these circumstances there would not be sufficient materials at hand to do so effectively."

The eggs, usually seven or eight, and sometimes as many as twelve in number, are deposited about the middle of May, or sometimes not until the end of that month, are yellowish grey or stone-ochreous in colour, and are dotted and marked all over with brownish black, those in my collection averaging about $2\frac{3}{40}$ by $1\frac{19}{40}$ inch in size.

The specimen figured, on the same Plate with *Fulica cristata*, is an adult bird in the early spring.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, ad., c, pull.* Leadenhall Market (*H. E. D.*). *d, juv.* Ural, 1868 (*Sabanäeff*).

*E Mus. Brit. Reg.*

*a*, ♀. Avington, Hants, November 25th, 1872 (*E. Shelley*). *b, juv.* Holland. *c, d.* Tunis. *e, f.* Yarkand. *g.* Behar, India. *h.* Nepal. *i.* Thibet (*Lord Gifford*). *k, l, m.* Australia.

## Family GRUIDÆ.

### Genus GRUS.

*Ciconia* apud Brisson, Orn. v. p. 388 (1760).
*Ardea* apud Linnæus, Syst. Nat. i. p. 234 (1766).
*Grus*, Bechstein, Vög. Deutschl. iii. p. 60 (1793).
*Anthropoides* apud Vieillot, Nouv. Dict. ii. p. 163 (1816).
*Scops* apud G. R. Gray, List of Gen. of B. p. 86 (1841).
*Antigone* apud Reichenbach, Syst. Av. p. xxii (1851).
*Leucogeranus* apud Bonaparte, Cat. Parzud. p. 9 (1856).

By many authors the Cranes have been associated with the Herons; but they differ very widely in structure as well as in habits; and, besides, the young when first hatched are able to run about, whereas the young of the Herons are helpless when they emerge from the egg. The Cranes are very widely distributed over the surface of the globe, being found in the Palæarctic, Ethiopian, Oriental, Australian, and Nearctic Regions, three species being found in the Western Palæarctic Region, two of which are resident, the third (*Grus leucogeranus*) being a straggler from the Eastern Palæarctic Region. *Grus antigone* is said by Von Nordmann to have occurred on the Don; but I cannot find any proof that a specimen has ever really been obtained in Europe.

The Cranes frequent open flat localities, either large marshes or open steppes, where they can have an uninterrupted view over the surrounding country. They are wary and watchful to a degree; and it is most difficult to approach within gunshot range of them. They walk with ease, and are as a rule remarkably swift-footed; and when on the wing they fly well and swiftly, though steadily and sedately; but they rise into the air with some difficulty, and when they settle they run for a short distance with outstretched wings before they can bring themselves to a standstill. Their note is loud and trumpet-like, and may be heard at a considerable distance. They feed on vegetable substances of various kinds, and are said to be partial to acorns. They breed in marshes, constructing a nest of twigs and grass, which is placed on the ground, and depositing two eggs, which are olive-grey or olive-brown in colour, streaked and blotched with reddish brown and pale brown.

*Grus communis*, the type of the genus, has the bill much longer than the head, straight, tapering to the point, which is rather obtuse and notchless; nasal groove extending to the centre of the bill, the nostrils, which are linear and direct, placed in the fore part of this groove; the greater part of the head is bare and sparsely covered with hair-like feathers; wings long and full, the third quill longest, the primaries attenuated on the inner web; the inner secondaries longer than the closed wing, curved outwards, the filaments loose towards the end; tail short, rounded; the legs long, the tibia bare for about a fourth of its length, and covered with hexagonal scales; tarsus anteriorly scutellate, having hexagonal scales on the sides and larger scales behind; hind toe small, anterior toes short and stout, the third and fourth connected at the base; claws short, decurved, rather obtuse, the third having an inner, thin, entire edge.



**COMMON CRANE**

GRUS COMMUNIS

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# GRUS COMMUNIS.

(COMMON CRANE.)

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*Ardea grus*, Linn. Syst. Nat. i. p. 234 (1766).
*Common Crane*, Lath. Ind. Orn. ii. p. 674 (1790).
*Grus communis*, Bechst. Vög. Deutsch. iii. p. 60 (1793).
*Grus cinerea*, Bechst. Nat. Deutschl. neue Ausg. B. iv. Abth. 1, p. 103 (fide Meyer, 1801–9).
*Grus cinerea* (Bechst.), Meyer, Tasch. deutsch. Vogelk. ii. p. 350 (1810).
*Grus vulgaris*, Pall. Zoogr. Rosso-As. ii. p. 106 (1811–31).
*Grus cinerea longirostris*, Temm. & Schl. Faun. Jap. p. 117 (1850).
*Grus cineracea*, Brehm, Naumannia, p. 289 (1855).

*Chorra-mhonaidh*, Gaelic (*Gray*); *La Grue*, French; *Grou*, Portuguese; *Grulla*, Spanish; *Grua*, Maltese; *Rhernong*, Arab; *der Kranich*, German; *Kraan*, Dutch; *Almindelig Trane*, Danish; *Trane*, Norwegian; *Trana*, Swedish; *Jouravl sieryi*, Russian; *Lóraw*, Polish.

*Figuræ notabiles.*

Werner, Atlas, *Cursores*, pl. 17; Buff. Pl. Enl. pl. 769; Gould, B. of Eur. pl. 270; Naumann, Vög. Deutschl. pl. 231; Temm. & Schl. Faun. Jap. pl. lxii.; Polydore Roux, Orn. Prov. pl. 326; Sundevall, Sv. Fogl. pl. 47. fig. 3.

*Ad.* pallidè cinereus: fronte et loris pilis nigris vestitis: vertice rubro, papilloso, pilis nigris vix vestito: nuchâ, genis, gulâ et collo antico infra medium nigricantibus vix schistaceo lavatis: lineâ latâ utrinque ab oculo per collum laterale productâ, cinereo-albâ: remigibus nigris, secundariis intimis elongatis, laxis, filamentosis, nigricantibus, extimis extimè cinereis: rectricibus cinereis nigricante apicatis: rostro virescenti-nigro, apice pallidiore: iride brunneâ: pedibus saturatè nigricantibus.

*Pullus* suprà pallidè rufescenti-arenarius, subtùs saturatè rufescens, abdomine et corpore reliquo griseo-albis: capite suprà, dorso et uropygio imo rufescentibus.

*Adult* (Archangel, 10th of September). Forehead and sides of the face covered closely with black hair, the warty red skin showing through towards the hinder part; crown red and warty, scantily covered with thin hairs; nape for about the distance of two inches greyish black, below which the hinder part of the neck is white, this colour extending on each side of the black nape up to the eye; throat, excepting a narrow white streak from the base of each mandible, and neck slaty black; lower part of the neck all round, underparts generally, back, scapulars, and wing-coverts ashy grey, slightly discoloured with brown here and there on the back; primary quills black; secondaries greatly elongated, forming a conspicuous ornamental plume covering the hinder parts; these feathers are grey like the back, but are either conspicuously tipped with black, or have the outer web of that colour; in texture they are loose, the radii hanging loosely and being in some partly curled; tail grey, blackish towards the tip; bill greenish brown, much lighter at the base, dull flesh-coloured at the base of the under

mandible; iris reddish; legs blackish grey. Total length 45 inches, culmen 4·7, wing 24, tail 8·1, tarsus 9·6.

*Nestling* (Wermland, Sweden, 30th of May). Covered with close soft down; upper parts brownish-sand-colour; on the head, centre of the back, rump, and edge of the wing-joint rufous brown; underparts light reddish brown; abdomen dirty white. A much older bird in Baron von Hügel's collection is similar to that above described, but, if any thing, rather paler.

*Obs.* In the summer plumage the upper parts have a dull rusty brown tinge; and there has been considerable doubt as to how this colour is caused, whether by the ferruginous water of the marshes or a natural colouring of the feathers. Von Homeyer considers that the bird plasters its back with earth, so that when sitting it may not be so easily discerned, and states that he has himself seen the bird put the earth on its back; but Gloger doubts this being the case. Meves analyzed this colouring-matter, and found it to contain ferruginous matter, and is therefore inclined to side with Mr. von Homeyer as to the cause of this discoloration.

The Crane inhabits during the summer season the northern portions of Europe and Asia, migrating southward when the autumn sets in; it has, however, been met with breeding as far south in Europe as Spain. In Great Britain it is now scarcely ever seen, though formerly it was, according to Ray and Willughby, resident in this country. Mr. A. G. More writes that "the Crane is spoken of by Turner (Avium Historia, 1543) as breeding in this country. This author says, 'earum pipiones ipse sæpissime vidi;' and an Act of Parliament, passed in 1553, made the taking of a Crane's egg an offence punishable with a fine of twenty pence. But the bird could not have long continued the practice of breeding with us; for to Sir Thomas Browne and John Ray it was only known as a winter visitant. As in several other cases the bird's name remains, and in many parts of the country the Heron is commonly known as the 'Crane.'" "In Scotland," Mr. Robert Gray writes, "it is very rare, and has only been met with in two instances in any of the western counties. A young bird, which I have seen and examined, was shot on Dundonnell estate, near the head of Loch Broom, West Ross-shire, in September 1869. Another was seen in March 1870 at Torridon, in the same county, by a keeper, who shot at the bird, but it made its escape. I obtained these particulars in the neighbourhood personally, about a month afterwards. It has, perhaps, occurred more frequently in Orkney and Shetland than elsewhere in Britain. The years 1807, 1832, and 1833 may be mentioned in connexion with its appearance. In Mr. Dunn's copy of Baikie and Heddle's work a note in MS. by one of the authors states that a specimen was killed in Shetland in 1848. I examined a very fine bird of this species, which was shot near Hawick, in May 1863: the specimen is still in the possession of Mr. Forrest, gunmaker, Jedburgh. Dr. Saxby mentions that two were shot in Shetland in 1865—one in July by himself, the other at Haroldswick a few weeks previously,—and also that he obtained a male in the island of Unst, in the end of May 1869, where a pair had been seen on the 11th of the same month. One, an immature specimen, was killed on the banks of the Dee, in Aberdeenshire, in the end of May 1851, by Mr. Francis Anderson, and is still in that gentleman's possession. This bird, as I have been informed by Mr. Angus, frequented a field contiguous to the river for several days. It was wounded in the evening about dusk, and in the darkness escaped by flying into a neighbouring wood. It was, however, shot dead next morning while roosting in a tree. The specimen

was preserved by Mr. Mitchell, and shown by him to the late Professor Macgillivray shortly before his death: it was the only example of the species ever seen in the flesh by that excellent ornithologist, and is now invested with a somewhat melancholy interest, as being the very last bird he examined. An old Scots Act, passed in 1551, provides that the price of a Crane shall not exceed five shillings, thus ranking it with the Swan in value. No act of the present day would prevent collectors giving at least ten times that amount for a British-killed specimen."

In Ireland it is, according to Thompson, "an extremely rare visitant." In Smith's 'History of the County of Waterford,' published in the year 1745, the following passage appears:—"The Crane (*Grus*), which is a bird of passage. During the great frost of 1739 some few Cranes were seen in this country, but not since or before in any person's memory." The same author in his 'History of the County of Cork,' published in 1749, remarks that "the Crane was seen in this county during the remarkable frost in 1739; but they do not breed with us." In March 1834 Mr. Glennon, bird-preserver, informed me that a Crane, then in the Museum of the Royal Dublin Society, and seen by him in a fresh state, was shot in the county of Galway about twenty-five years previously. By letter from Richard Chute, Esq., written in 1846, I was assured that "a Crane was shot in Tralee Bay, about twenty years ago, by the Rev. John Chute, now rector of Roscommon." My correspondent, though but young at the time, saw the bird; he states, on the additional authority of the shooters and others, that it was unquestionably the "Crane." Mr. Harting also makes the following reference:—"In a 'Notice of animals which have disappeared from Ireland during the period of authentic history,' the author, Dr. Scouler, remarks, 'the Crane (*Grus cinerea*) was formerly so plentiful that, according to Giraldus, flocks consisting of a hundred individuals were extremely common.' The words of Giraldus are, 'in tanta vero numerositate se grues ingerunt, ut uno in grege centum et circiter numerum frequenter invenies.'"

I may here mention that Mr. Cecil Smith informs me that "in Somerset of late years only one specimen has occurred, and that a young bird of the year, which was shot by Mr. Haddon, of Taunton, at Stotford, near Burnham, on the Bristol Channel, on the 17th of October, 1865. This seems to have been rather a great year for British Cranes."

It has been once obtained on the Færoes, over which it occasionally passes during migration. In Scandinavia are its head quarters during the summer season; and as regards its range in Norway my friend Mr. Robert Collett informs me that "its chief habitat is in the large mosses in the conifer-woods in the interior of the southern portions of the country. In these localities it is common, and especially so in the mosses fringing Lake Mjösen, on Hedemarken, Österdalen, and in the southern portion of the Gudbrandsdale. Stray individuals are often met with north of the Dovre; but so far as I can ascertain, it has not been met with breeding in Nordland and Finmark; but it has been killed in the immediate proximity of the North Cape, and of late years it has occurred several times on the Varanger fiord, and near the Russian frontier. It migrates to and from Norway over the west coast of Sweden, and is therefore rare in western Norway. Flocks of from ten to twenty individuals are almost annually seen near the Christiania fiord." To the above I may add that Pastor Sommerfelt writes that it has occurred in the autumn in the Varanger fiord, and has once been shot at Utsjok. In Sweden it arrives in March and April, spreads over the wild morasses, chiefly those in the far north, where it breeds, and leaves again in August and

September. The peasantry in Skåne have an old proverb to the effect that the Crane arrives always on the third Thursday in "Thor's" month (March), which runs as follows:—"Tredje Thorsdagen i Thor, sätter Tranan sin fot på Sveriges jor" (on the third Thursday in Thor the Crane sets his foot on Swedish soil). This (calculated after the old style) would, Nilsson says, make the date of its arrival early in April, which is about the true time of its arrival. Nilsson states that it breeds even in the south of Sweden, in the marshes of Småland, and in Skåne on the borders of Blekinge. Regarding its breeding in Lapland the excellent notes published by the late Mr. Wolley are given below. In Finland it is by no means uncommon in the far north; and I met with it near Uleåborg, Kemi, and Torneå, and obtained the eggs at Ijå, where a few pairs always breed. When travelling northwards early in April large flocks were seen migrating in that direction, their clear loud trumpet-like note being heard before the birds themselves were seen. A. von Nordmann states that a considerable number breed on the large morasses in Nurmis, northern Karelen; and Professor Malmgren writes to me that it breeds all over the country, excepting the south-western portions, from lat. 60½° to lat. 68½°.

It is common in Northern Russia; and Mr. Sabanäeff informs me that in Central Russia the Crane is found wherever there are large wooded swamps, and consequently it is more numerous in the Governments of Twer, Jaroslaf, and Wladimir than in any of the southern Governments. In the south-eastern Governments it is met with more often; but in the southern and south-western portions it is migratory. In the north it is, again, rare, although it was found as far as North Karelen and Archangel, and in the Northern Ural nearly as high as 68° north lat. But the Crane seldom builds in the Bogoslofsky Ural, notwithstanding the numerous suitable localities. In Central Russia it generally breeds in the densely wooded swamps, on hillocks, beyond the Ural Mountains in large swamps overgrown with wood and bushes, and there builds a very large nest, constructed chiefly of reeds. After the breeding-season is over they seldom remain in the swamps, but go there for the night, during the day-time frequenting meadows and ploughed fields. It is especially destructive to oats and peas. In the spring it picks up and eats the corn that is sown. The spring migration generally lasts a shorter time than that in the autumn. In South-western Russia the migration commences about the middle of March, and ends about the 10th of April; the autumn migration lasts from the middle of August very nearly to the middle of October. In Central Russia and in the Government of Perm the first Cranes do not appear before the 20th of March, generally in the first days of April, and the migration lasts till the middle or even to the 20th of April. The departure commences from the 20th of August (in 1869 the 8th of August), and sometimes lasts till the beginning of October; but generally it is over by the last days of September. In the middle of April they are sitting; and I found their eggs about the 20th of May. In the beginning of July the young are able to fly, and assemble in flocks. Mr. Taczanowski informs me that "the Crane is common enough in Poland, and breeds there in large or less numbers. Besides, I have on several occasions observed bands which during the breeding-season were scattered over the wild marshes in the Government of Lublin and in Volhynia, and which by their actions appeared to be young birds, which do not breed in their second year. According to Professor Kessler the Crane is just as common in the districts of Kieff. It is also very common in Eastern Siberia, and does not differ in any way from the European bird." Meyer records it as common in Livonia, arriving in April and leaving

in September; and Borggreve gives it as a tolerably common summer resident in the large wooded marshes in the eastern portion of North Germany, and a regular migrant throughout the entire country. It seldom frequents the bare open marshes, and probably seldom, if ever, breeds in the western portion of the empire. He later on, however, states that it breeds still regularly in Drömling, on the boundary of the Weser and Elb territory; and Mr. A. von Homeyer writes that about ten pairs breed on the Gorlitzer moors; and, according to Tobias, more breed near Priemkenan. Kjærbölling states that, though becoming rare in Denmark, it still breeds in several parts of the duchies; but Mr. Benzon writes to me that, "although formerly the Crane was to be found breeding in Denmark, and must have been common, as is proved by the names of places such as 'Tranekjær' &c., I know no instance of its nest having been found here of late years. It rarely occurs in Denmark, the morasses having been chiefly drained off, so that it finds no congenial place of habitation with us." In regard to its occurrence in North-western Germany, Mr. Carl Sachse informs me that "it has not been known to breed in the Rhine provinces, but passes regularly. In 1863 they passed between the 29th of March and 2nd of April, in 1864 on the 3rd of April, in 1865 on the 5th of April, in 1866 from the 14th to the 18th of March, in 1867 on the 20th of March, in 1868 from the 15th to the 25th of March, and in 1871 between the 20th and 30th of March. On their return they usually pass from the middle to the end of October. In 1854 much snow still remained on the ground in March, but still several flocks of Cranes arrived, and remained until the snow melted. They seemed to have quite laid aside their usual caution, and could be approached to within twenty paces, and even in the open to within from thirty to fifty paces, so that about fifty were shot down in a few hours. Excepting that year, I have never seen a Crane settle down on the ground here since 1840. It seems as if they knew by instinct that they would meet severer weather further to the north, and therefore remained here and picked up what food they could get under the snow." In Belgium, Holland, and France it is met with during the seasons of migration, but does not appear to remain for any time in any of those countries. Professor Barboza du Bocage records it as found occasionally in the wilder portions of Alemtejo and Algarve; and Lord Lilford informs me that it is very common in Southern Spain during the winter, a few pairs remain to breed in the Marisma of the Guadalquivir, and there is a colony not far from Casa Vieja, from which Major Irby obtained several eggs. Major Irby himself writes to me that "the Crane is abundant on both sides of the Straits of Gibraltar from October to March. None appear to remain to nest in Morocco. In the marshes of the Guadalquivir some few pairs remain during the nesting-season. I found one nest, but no eggs, nor have I seen any from those parts. In the swamps of the Laguna de Janda and between Vejer and Casa Vieja in some years as many as forty pairs remain to breed. They do not nest near one another, or in any thing like a colony, being scattered over an extent of some thousands of acres. They begin to lay about the first week in May, the complement of eggs is never more than two." In Malta, Mr. C. A. Wright informs me, "a few are seen annually in spring and autumn, and occasionally in the winter months. One was killed on the 13th of December, 1860, and another in March 1861;" and it is a regular visitant to Italy, both in the spring and autumn, and is even said to breed in the neighbourhood of Venice. Dr. Henry Giglioli says that "a few Cranes repass Pisa in March; and it is a fine sight to see them flying

high in the air, forming a compact phalanx of the shape of an inverted Y (χ); they generally betray their presence by loud and discordant screams. With Savi, I believe it not unlikely that a few pass the winter in the Tuscan Maremma and Pontine marshes." In the Ionian Islands, Lord Lilford writes, it is "often to be heard and seen, passing over Corfu at a great elevation in the months of March and October. The only spot in these parts in which I have seen this species on the ground was on the Greek frontier, opposite Prevesa, where I fell in with a troop of several hundreds in March 1857. I saw a freshly killed specimen in a ditch near Corfu on the 2nd of April 1857." Lindermayer also states that "during the equinoctial gales a few appear in Greece, remain on the mainland a short time to rest, and then migrate northwards." It has not been found breeding there; and Lindermayer states that he has never observed it in the autumn. In Austria the Ritter von Tschusi Schmidhofen records it as rare during passage: and Dr. O. Finsch states that it breeds on the islands in the Danube; but I never heard of its breeding there. Messrs. Elwes and Buckley "found the Crane tolerably numerous in some of the marshes in Turkey, and were told they breed in Macedonia, which seems very likely, as the ground was of almost exactly the same nature as the places where they breed in Lapland, and the Crane has been found breeding in Spain quite as far south as this. We found Crane-steak capital eating when well cooked, though not quite so 'gamy' as Bustard, which is a first-rate bird for the table." It is met with in Southern Russian during passage; and Mr. Goebel writes that it passes through Uman late in March and early in April, and again late in August and early in September; and he further states that it breeds on the Krasnostaw and Sokolowschen marshes. According to Von Nordmann many breed in Podolia, Volhynia, and Bessarabia, but in the Government of New Russia proper it is replaced by *G. virgo*. In Asia Minor the Crane passes in March, and again in October and November. Mr. von Gonzenbach, who gives a long list of the dates when they pass near Smyrna, further states that they do not all pass on to Africa, as he has seen two which were shot near Volo early in January 1861. Dr. Tristram met with it in Palestine, where, he states, "it was the only species of Crane we observed, and that only in winter. At Moladah, about thirty miles west of the south end of the Dead Sea, we chanced to camp close to a roosting-place of Cranes. Hard work and, I hope, a good conscience made us sound sleepers; else the din of the Cranes might have aroused an Ephesian. Towards sunset these enormous birds began to return homewards, flying in order, like Geese, with out-stretched necks, keeping up a ceaseless trumpeting; but, unlike Rooks, they were not all early to bed, for fresh arrivals seemed to pour in for several hours, and the trumpeting continued till morning, with only an occasional lull. The howl of some wandering Jackal would rouse the whole camp; then, after a slight pause, the wail of an Hyæna evoked a deafening chorus; and before daylight began an angry discussion, perhaps on the next day's journey. Parties of some hundreds departed for the south with the dawn; others remained, probably to make up for their broken slumbers, till the sun had risen for a couple of hours. The roosting-place was a group of hillocks covering several acres, and was covered with the mutings of the birds as thickly as the resort of any sea-fowl. It has evidently been occupied for years. I have no reason to think that the Crane ever breeds in Palestine." Mr. C. W. Wyatt, when on the Sinai Expedition, saw single birds on the marshes near Tor in February; and Captain Shelley writes that it is a "common winter visitant both in Egypt and Nubia, arriving in October and leaving again in

March. During their stay they may frequently be met with in flocks on the sand-banks and desert spaces by the river, or in the wide plains of halfa-grass." In North-western Africa it is partly a migrant and partly a winter resident. Mr. Taczanowski states that numbers winter in Algeria, and in the El Outaja valley he saw numbers which passed every evening northwards, and in the mornings southwards; it is met with in pairs in the desert. Canon Tristram records it as "on passage in spring and autumn, sometimes halting for a time in the salt marshes." Mr. Tyrwhitt Drake includes it in his list of the birds of Tangier and Eastern Morocco. Lord Lilford informs me that he met with it commonly near Tunis in November; and Mr. Osbert Salvin writes that it "is found in Tunis in great numbers during the winter months, frequenting the large plains. On one occasion, between Tunis and Oudeno, I counted 108 of these birds on the wing at once. They are said to be migratory; and probably they seek their breeding-haunts in the continent of Europe."

To the eastward the Crane has an extensive range. Pallas gives its eastern range as "all Siberia to the Lena, Kolyma and Anadyr rivers, and during migration observed even in Nishne Kamtschatks and Olutora, in Kamschatka, though rare so far north." Von Schrenck did not obtain a specimen on the Amoor, but observed it during migration. In the spring of 1855 Mr. Maximowicz observed the first Cranes at the Mariinskischen Post on the 7th (19th) of April. Dr. Radde brought home four specimens from Siberia, all of which agreed with the common European Crane in measurements and plumage. He writes that the first were observed by him at Tarei-nor on the 23rd of April, where they were not numerous. On the 24th of August, 1859, he observed them passing over the Kamardaban mountains, on their journey southward; on the 16th he saw them near Kultuk, on the wing, practising their flight; on the 26th of August, 1856, they had left the Tarei lake, and on the 30th he saw a large flock passing southward. He observed a flock flying in a south-westerly direction on the 25th in the Bureja mountains; but on the 2nd of September others passed in a direct southern direction. It occurs in Japan, whence it is recorded in the 'Fauna Japonica' under the name of *Grus cinerea longirostris*; and Mr. Swinhoe, who met with it in China, records it as occurring "every winter at Swatow, lower down the coast than at Amoy, in flocks of a hundred or so; they live during their stay chiefly on sweet potatoes (the tubers of *Batatas edulis*)." He also writes that it "occurs in small parties every winter on the sand flats of Swatow. In Naochow and Hainan they were very abundant, and we often had opportunities of watching them. They are prized as food by the natives; and the soldiers shoot at them, which renders them wild and difficult of approach. They feed largely here on the sweet potatoes. It was only on the plains and open parts of the country that we saw them. They did not occur south of the mountains. The last flight we noticed was on the 23rd of March, at Hoitow (W. Hainan). The magistrate at Lingmun informed me that 'Cranes are born in pairs and mate for life. If one is born singly he remains a bachelor all his days, and becomes a sentinel to the flock. This is a hard duty to perform; for if the sentinel gives a false alarm he is beaten, and if he does not give the alarm soon enough he is also beaten.' The Chinese 'Gazetteer' remarks on the abundance of Cranes in Hainan, and their scarcity in other parts of the Canton province." According to Jerdon it "visits India in numerous flocks during the cold weather. In the Deccan and Central India it is generally seen in small flocks of from six or eight to twenty, now and then in much larger

numbers, especially in the Punjab and North-west Provinces." Major Irby writes that "large flocks appear during the cold season, and are chiefly found near the rivers Choka and Kurnalli, feeding on the rice-stubbles. This and *Anthropoides virgo* are much prized by European sportsmen under the name of 'Courlan.'" And Dr. Leith Adams records it as "very abundant during the cold months on the rivers of the Punjab. They migrate evidently from the west, and return again before the commencement of the hot weather. The numbers that frequent the banks of the Jhelum below the city of that name and the confluence with the Chenab, are almost beyond conception; they commit grave havoc in the wheatfields. They are shy and difficult of approach." In America this species of Crane does not occur, being there replaced by two allied species—*Grus canadensis* and *Grus fraterculus*.

The Crane is one of the most wary and watchful birds; and I have spent hours in trying to stalk them without success. There is an old saying amongst the peasantry of the high north, that the Crane when standing on sentry, as one of a flock generally does, stands on one leg and in the other holds a stone, so that, in case it should nap off, the falling stone would immediately awaken it. The crest of the Cranstouns is, as stated by Sir Walter Scott in the 'Lay of the Last Minstrel,' a Crane standing in this position, and may have reference to the above-referred-to tale; and if so it clearly typifies the extreme watchfulness so necessary to the Borderer in the old troublous times, when on the Border every man had to be prepared for warfare at any moment. When on migration they fly in flocks, arranged in lines or triangles; and it is astonishing at how great a distance their clear loud cry can be heard. They often travel by night, especially when migrating northward; and when in Finland and Scandinavia I have when awake often heard them passing overhead in the middle of the night. They generally, it seems, fly at a considerable altitude, and in a very steady, sedate manner, from time to time uttering their loud trumpet-like cry. When taken young they become very tame; and I have on several occasions, in the villages in Finland, seen tame Cranes, which appeared to belong to no one in particular, but visited any hut where they were well treated. Dr. Sundström sends me an extract from the Swedish sporting magazine, 'Svenska Jägareförbundets gamla Tidskrift,' published in 1833, which translated reads as follows:—"Some years ago two young Cranes, a male and a female, were caught on the large moor near the celebrated springs of Porla, in Nerike, where the Crane annually breeds. They were taken to the farmhouse at Wissbo to be brought up, and were at first quite a nuisance, as they kept up a continual piping sound; but as they grew up they left off this bad habit. The male was killed by a kick from a bull he attacked; but the female grew up with the chickens and ducks as companions, and kept these latter in good order, especially at meal-times; for if they came too close and interfered with her, she would put her beak and head under them and throw them high up into the air. She would wait at the kitchen-door at meal-times for the boys who came out with a piece of bread and butter in their hands, and, catching at their bright buttons, would often get them to drop the bread and butter, which she immediately snatched up, and would swallow in such large pieces that they could often be seen working down her throat. She often tried to get into the kitchen and rooms, but was always turned out, her habits not being exactly as cleanly as they might be under the circumstances. Dogs she soon put to flight; and the cats were wise enough to give her a very wide berth. She would frighten children and mischievous boys by raising herself to her full height, stepping

backwards and gaping with her bill. She was fond of the herdsman's lad, who in the evenings would play with her, throwing up his cap into the air and performing a sort of war-dance, which she would imitate, to the great delectation of the spectators. Between her and the gardener there was a standing feud, as she would root up the flower-bulbs, which she pulled in pieces and threw away, but was careful to be out of the way when the gardener came. When any one else was digging in the garden she would watch so closely for the worms and certain roots that one would suppose her head to be in danger of being injured by the spade. She was fond of potatoes, but would sometimes strike a large one and get it fast on her beak, and be unable to get it off. She would then go round to every one for assistance until some one would take it off. Though her wings had been clipped, she could fly a little, and paid visits to the labourers in the fields. Her sense of hearing was very acute; and she knew perfectly well how to distinguish the housekeeper's voice when he called the chickens or uttered her name, *Trana*, *Trana*, when she would hurry up, partly running and partly flying. On the following year, when she could fly well, she always dropped down out of the air when the well-known call was heard, but on reaching the ground could never stand before taking twenty to thirty steps with uplifted wings. She was fond of small fishes, but did not care to take them if offered tail foremost; but offered head first, so that the fins did not trouble her, a dozen did not seem to come amiss. Curiously enough she was fond of meat, but generally would take a piece to the neighbouring shore and wash it in the water, and then before swallowing it would work it about for some time in the sand. When about three years old, and accustomed to fly miles away, remaining absent all day, she was missing, and probably fell a victim to some gunner, who either made a meal of her or used her long legs for pipe-stems. A tame Crane died at Hofva vicarage, in Westergöthland, where it had lived for fifteen years. It was taken quite young, when not fully feathered, and used to be fed in the kitchen, where it became a prime favourite. It was a male, and perhaps therefore took more kindly to ladies' society, never caring to remain where the men were, especially if several were present. It soon became greatly attached to the lady of the house, and whenever she came outside the house would greet her with cries, distinguishing her voice (even her sneeze) when she spoke in the room and it could hear her. It would take good care to help itself when the chickens were fed; and if they would not give place, it would pick one of them up, carry it to the pond, and give it a good ducking. It had a decided taste for dancing, but would not dance for every one, but when so inclined would cut most ludicrous capers, and imitate figures when encouraged to do so, retiring and advancing in turn. The organs of sight and hearing were especially developed. When the piano was played it would first listen outside and then march solemnly into the room, even if strangers were present, and take up its position beside the piano, where it would remain as long as the music lasted. It knew perfectly well when an adagio was played, and would droop and move its head about, looking quite melancholy, but as soon as a lively polka or quadrille was struck up would rise upright and, moving its head quickly, would give every sign of pleasure. It was fond of a looking-glass, and if allowed to stand before a large mirror would bow and scrape most comically. It often called to wild Cranes; but having its wings clipped, it could not join them. Once it induced one to come to it, and promenaded about with it in the field all day long, but was forsaken when it wanted to return to

the house in the evening. One morning it was found dead in its sleeping-place, without any sign of having been injured."

The Crane breeds in Sweden, Norway, Finland, Northern Germany, Russia, Northern Asia, and in Western Europe, as before stated, in Spain. Mr. Howard Saunders writes:—"I found it nesting, and have eggs from the marshes of Doñana, and am informed that in some places it nests almost in colonies. It is partial to acorns, and in the Dehesa de Remonte it interfered so much with the fattening of the pigs which are driven in to feed, that war was declared against the species by the proprietor."

The Crane breeds on the ground, forming a simple nest, in which are deposited usually two eggs; but Mr. Meves informs me that he has known instances of three having been found in the same nest. I know of no better account of its nidification than that published by the late Mr. Wolley, in the first volume of 'The Ibis;' and as that book is now becoming so rare, I do not hesitate to quote this *in extenso* as follows:—"It was on the 15th June, 1853, that I entered the marsh which the well-known Pastor Læstadius had told me was the most northern limit in Lapland of the breeding of the Crane. It is in Swedish territory, being on the west side of the frontier river, opposite the Finnish (Russian) village of Yli Muonioniska, in about lat. 68°—that is, some distance within the Arctic Circle. This great marsh, called '*Iso uoma*,' is mostly composed of soft bog, in which, unless where the Bog-bean grows, one generally sinks up to the knees, or even to the middle; but it is intersected by long strips of firmer bog-earth, slightly raised above the general level, and bearing creeping shrubs, principally of sallow and dwarf birch, mixed in places with *Ledum palustre*, *Vaccinium uliginosum*, *Andromeda polifolia*, *Rubus chamæmorus*, besides grasses, *Carices*, mosses, and other plants. There were also a few bushes or treelets of the common birch, and these quite numerous in some parts of the marsh.

"Walking along one of these strips, in a direction where the pair of Cranes was said to be often heard, I came upon a nest which I was sure must be a Crane's. I saw one bit of down. The nest was made of very small twigs mixed with long sedgy grass; altogether several inches in depth, and perhaps two feet across. In it were two lining-membranes of eggs; and on searching amongst the materials of the nest I found fragments of the shells. We had not gone many yards beyond this place, when I saw a Crane stalking in a direction across us amongst some small birch trees, now appearing to stoop a little, and now holding its head and neck boldly up as it steadily advanced. Presently the lads called out to me that they had found some young Cranes. As I ran towards them, a Crane, not the one I had previously seen, rose just before me from among some bushes which were only two or three feet high, and not twenty yards from the place where the lads had been shouting at least for a minute or two. It rose into the air in a hurried, frightened way. There was nothing just at the spot where it got up, neither eggs nor young. I then went up to where the two little Cranes were found. They were standing upright, and walking about with some facility, and making a rather loud 'cheeping' cry. They seemed as if they could have left such eggs as Cranes were supposed to lay only a very few days. I say *supposed*; for in England we know nothing of the eggs which are called Cranes', but which may have come from any part of the world. They were straightly made little things, short in the beak, livid in the eye, thick in the knees, covered with a moderately long chestnut or tawny-coloured down, darker on the upper parts, softening away into paler underneath. As I fondled

one of them it began to peck playfully at my hands and legs; and when at length I rose to go away, it walked after me, taking me, as I supposed, for one of its long-legged parents. I had only just before been plucking from it some bits of down to keep; for, valuable as I knew it to be in a natural-history point of view, I could not make up my mind to take its life. As soon as I saw its inclination to follow, I took to double-quick time, and left it far behind. Its confidence was the more remarkable, as, all the time we were with it, the old Cranes were flying round near the ground at some distance from us, their necks and feet fully stretched out as usual, but with a remarkable sudden casting up of the wings in a direction over the back after each downward stroke, in place of the ordinary steady movement; at the same time they were making a peculiar kind of low clattering or somewhat gurgling noise, of which it is very difficult to give an intelligible description; and now and then they broke out into a loud trumpeting call not unlike their grand ordinary notes, which, audible at so great a distance, gladden the ears of the lover of nature. As we went away I saw one of the Cranes alight where we had left the young. Later in the day I had a longing wish to have another look at my young friends. I thought of the old naturalists—who would have called them 'peepers' I suppose—one of whom wrote of the Crane in our fens, '*ejus pipiones sæpissimè vidi.*' To see them now-a-days twice in a life, and that not in England, would be a consolation. But it was not to be so; we came back to the spot where we had parted with them, rested for three or four hours round a stone that projected from the marsh, but we saw and heard nothing more of either old or young Cranes. In a morass with another name (which it took from a hill that overlooked it), '*Kharto uoma*,' but which was only separated from '*Iso uoma*' by an interval of a mile or two of birch thicket, there were also Cranes; and I found their nest with the egg-shells lying in the water by it, and so many quill-feathers scattered about, that I almost feared some accident had happened to the sitting bird.

"The following year, 1854, on the 20th of May, I went with Ludwig my servant lad, to look for the Crane's nest in '*Iso uoma.*' We saw no birds; and the spot where the nest had been the preceding year was not easy to find in so extensive a marsh. So we quartered our ground, working carefully up one strip of harder bog and down the next. After some hours of heavy walking I saw the eggs—joyful sight!—on an adjacent slip in a perfectly open place. The two eggs lay with their long diameters parallel to one another, and there was just room for a third egg to be placed between them. The nest, about two feet across, was nearly flat, made chiefly of light-coloured grass or hay loosely matted together, scarcely more than two inches in depth, and raised only two or three inches from the general level of the swamp. There were higher sites close by; and many of them would have seemed more eligible.

"It was just at the lowest edge of the strip, but so much exposed, that I thought I should be able to see even the eggs themselves from a spot at a considerable distance, to which I proposed to go. There was a common story amongst the people of the country, that a Crane, if its nest were disturbed, would carry off its eggs under its wing to another place; so I purposely handled one of the eggs, and hung up a bit of birch bark on a birch tree beyond the nest, as a mark by which to direct my telescope. Then I went with Ludwig to a clump of spruce growing on some dry sandy land which rose out of the midst of the marsh. Here I made a good ambuscade of spruce boughs, crept into it, got Ludwig to cover me so that even the Crane's eye could not distinguish me, and sent him to make a fire to sleep by on the far side of the wood,

with strict orders on no account to come near my hiding-place. I kept my glass in the direction of the nest; but it was long before I saw any thing stir. In the mean time the marsh was by no means quiet; Ruffs were holding something between a European ball and an East-Indian nautch. Several times 'keet-koot, keet-koot,' to use the words by which the Finns express the sound, told where the Snipes were. A cock Pintail dashed into a bit of water calling loudly for its mate. The full melancholy wailing of the Black-throated Diver came from the river; watch-dogs were barking in the distance; I heard the subdued hacking of wood and the crackling of Ludwig's fire. It was already about midnight; Fieldfares were chasing each other through the wood: one came pecking about my feet; and another, settling on the branches that covered my back, almost made my ears ache with the loudness of its cries. I often heard the waft of known wings; but three times there sounded over head the sweeping wave of great wings to which my ears were unaccustomed. I could scarcely doubt it was the Cranes'; but I dare not turn up my eye: I even once or twice heard a slight chuckle that must have been from them. At length, as I had my glass in the direction of the nest, which was three or four hundred yards off, I saw a tall grey figure emerging from amongst the birch trees, just beyond where I knew the nest must be; and there stood the Crane in all the beauty of nature, in the full side light of an Arctic summer night. She came on with her graceful walk, her head up; and she raised it a little higher and turned her beak sideways and upwards as she passed round the tree on whose trunk I had hung the little roll of bark. I had not anticipated that she would observe so ordinary an object. She probably saw that her eggs were safe, and then she took a beat of twenty or thirty yards in the swamp, pecking and apparently feeding. At the end of this beat she stood still for a quarter of an hour, sometimes pecking and sometimes motionless, but showing no symptoms of suspicion of my whereabouts, and, indeed, no manifest sign of fear. At length she turned back and passed her nest a few paces in the opposite direction, but soon came in to it; she arranged with her beak the materials of the nest, or the eggs, or both; she dropped her breast gently forwards; and as soon as it touched, she let the rest of her body sink gradually down. And so she sits with her neck up and her body full in my sight, sometimes preening her feathers, especially of the neck, sometimes lazily pecking about; and for a long time she sits with her neck curved like a Swan's, though principally at its upper part. Now she turns her head backwards, puts her beak under the wing, apparently just in the middle of the ridge of the back, and so she seems fairly to go to sleep. While she sits, as generally while she walks, her plumes are compressed and inconspicuous.

"By this time all birds, excepting perhaps a Fieldfare, are silent. I was now sure the Crane would not carry off her eggs. After enjoying for a short time longer this sight—and no epithet is yet in use which expresses the nature of the feelings created by such scenes in the minds of those who fully enjoy them—I found that the air was freezing. I quietly got up, and on reaching the fire made myself comfortable. Some four hours later (that is, between four and five in the morning) we came again to the west side of the hill; there lay the Crane, head and neck still visible. We may have whispered too loud; for she soon raised her head. I now wished to see how she would leave the nest, whether crouchingly or not. I took a line not directly towards it, curving more upon it as I advanced, of course taking care to keep my eyes in a different direction. When I believed that I was just opposite, I looked, as I thought, towards the place,

which might be about twenty paces off; but I did not at first recognize the bird. She was a few feet from the exact spot I had expected; and I unconsciously took her for a grey stone, till my eye turned directly on her. I had then just time to mark her position with her head drawn in between her shoulders, when, having caught my glance, she rose steadily into the air. In one part of the nest was a damp spot from the water of the marsh having soaked through. The eggs now lay touching each other. When I came to blow them, I found to my surprise that they were one or two days sat upon. In 1855 this nest, as Ludwig informed me, was robbed by a Fielfras (*Gulo borealis*). I had the pleasure of showing it, towards the end of the summer of the same year, to my friend Mr. Alfred Newton, who thought the difficulties of the bog fully repaid by the sight even of an empty Crane's nest. We found on this occasion, on examining the materials of the nest, old pieces of egg-shell, showing that it was the same nest that had been used in previous years.

"I must not go into long particulars concerning the nest of 1854 in *Kharto uoma*. I found the two eggs on the 22nd of May, in a spot only two feet from the nest of the preceding year. It consisted of not more than a handful or so of whitish sedge grass, about twenty inches across and two or three inches only above the level of the water of the submerged parts of the marsh, close to the edge of which it was situated. There was a kind of creeping moss about it, and one or two very low-lying shoots of sallow.

"It was placed in an open part of the middle of the south-east wing of the marsh. I have a memorandum that there was not then a leaf unrolled, the only visible signs of summer being a kind of *Carex* coming into flower on the hummocks; and yet the nights were quite as light as the day. I kept watch at the distance of nearly half a mile; but unfortunately the smoke of my fire blew towards the nest. I saw a Crane go sailing down, and afterwards the pair walking together, when they indulged in a minuet or some more active dance, skipping into the air as the Demoiselles sometimes do in the Zoological Gardens. Once or so I saw the beak of one pointed perpendicularly to the sky; and a couple of seconds afterwards the loud trumpet struck my ear. It was two or three o'clock in the morning before a bird came on to the nest; and even then she was soon off, but again came back, sitting always with her head up. She left it very wild when at last we advanced from our bivouac. In this watch I saw and heard many interesting birds, amongst them a Hen-Harrier (*Circus cyaneus*). Also a pair of Goshawks (*Astur palumbarius*) dashed into a tree close over my head, the Crane still visible in the distance. These eggs were rather smaller than the pair from *Iso uoma*; two other nests which I have since obtained in Lapland have eggs as big as those which are said to come from Germany, and vary as they do. I had the pleasure in August 1857 of showing Mr. Frederick Godman and his brother Percy a nest near Muonio-vaara, from which eggs were taken the same year, and a young one fledged, from the same marsh at least, if not from the same nest as in 1856. Their wading to this nest, known to be empty, amidst swarms of greedy gnats, was a satisfactory proof of zeal.

"The locality was in a perfectly open part of the rather small marsh, which was scarcely half an English mile across; so that the bird on its nest must have been most conspicuous from every side. It was on a little elevation, not more than one stride across, and raised only a few inches above the water. The eggs on the 5th of June were a good deal sat upon. The finders

did not venture to leave them, both for this reason and because a large Hawk was believed to be watching them. They assured me that the birds did not cry, which agrees with my experience of their behaviour when I was near the other two nests.

"I went the day after the eggs were taken, to see the place. There was still ice enough down in the bog to prevent me sinking beyond a certain moderate depth; not so when the Godmans tried it. The nest, as usual, was of the kind of sedgy grass which grew in the same marsh, near the nest. Some of the pieces had been pulled up by the roots. It was twenty-seven inches across, and three or four inches in thickness, perfectly flat, dripping wet in its lowest layers. The birds sailed over our heads to another part of the marsh, where I examined them with my glass.

"It will be deduced from what I have stated that the Crane in Lapland is not gregarious when it has once arrived at its summer quarters—that as soon as it reaches its breeding-place, for the most part as soon as the snow is mainly off the ground, it repairs its simple nest, and lays its two eggs; for two were in the four nests that have occurred to me, and two generally say those few natives who know any thing about the subject. The nest is neither large nor concealed. The birds are silent towards intruders on the eggs. The young run probably as soon as, or soon after, they are hatched, and by some means are led or conveyed to a great distance by their parents after having been disturbed. They have a chestnut or tawny down, no feathers visible in their wings for some time. In Lapland, and, as far as I have heard, in Sweden and Finland generally, the Crane never breeds otherwise than on the ground."

Mr. Wolley in the above article further states that "it does not seem to visit Norway." But, as before recorded, it is not uncommon there; and Mr. Collett also writes that "for breeding-purposes it always in Norway prefers the isolated mosses in the conifer-woods, rarely at any considerable elevation on the fells; it is very wary during the breeding-season; and the nest is most difficult to find. Sometimes, however, the birds will boldly defend their eggs or young; and I once got an egg from a little boy who was attacked by one of the old birds with such fury that he was compelled to defend himself with a large stick. During this battle he dropped and broke one of the two eggs. In Norway its breeding-time is about the middle of June. One of my friends found a nest close to the town of Lillehammer, at Mjösen, on the 22nd of June, 1870; it only contained one egg, which measured $102\frac{1}{4}$ by 67 millimetres. Another large egg taken at Löjten, in Hedemarken, now in my own collection, measured 109 by 58 millimetres." Dr. E. Rey, writing to me respecting the eggs of the Crane, says:—"With reference to the systematic position of the Cranes I am, for oological seasons, inclined to place them close to the Bustards, particularly the African Bustards. *Otis caffra*, for instance, is evidently a link between *Otis* and *Grus*; and biological peculiarities and anatomical structure justify the connexion; they have little in common with the Storks, and nothing at all with the Herons. I have received the eggs of this bird from Sweden, Finland, North Russia, Siberia, Pomerania, Mark Brandenburg, Silesia, and South Russia. The nesting-time in Germany is during the latter half of April; the sittings consist invariably of two eggs. I find the average size of twelve eggs to be 97·1 by 60·8 millimetres, the two largest measuring 100·5 by 62 and 98·5 by 63 millimetres, and the two smallest 92·5 by 60·5 and 95 by 58 millimetres."

I have in my collection eggs of the Crane which I obtained when in Northern Finland, and

others from West Prussia and Norway, which in size vary from $3\frac{2}{4}\frac{5}{0}$ by $2\frac{1}{4}\frac{7}{0}$ to $3\frac{3}{4}\frac{2}{0}$ by $2\frac{2}{4}\frac{1}{0}$ inches, and in colour from light olive-grey to olive-brown, streaked and blotched, in some plentifully, in others but sparingly, with reddish brown surface-markings and pale brown underlying shell-spots.

Before closing this article I may remark that I have in the synonymy reverted to Bechstein's original name of *Grus communis*, by which he certainly called it both in his first edition in 1793, and in his 'Ornithologisches Taschenbuch' in 1803, although most authors refer to it as *Grus cinerea*, Bechst. Meyer (*tom. cit.*) describes it as "*Grus cinerea*, mihi," but refers to an improved edition of Bechstein, where it is stated to be described by that author as *G. cinerea*; I have been unable to examine this edition, and have therefore given the reference as recorded by Meyer.

The specimens figured and described are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Archangel, September 10th (*Piottuch*). *b*, *pullus.* Wermland, Sweden, May 30th (*Meves*).

*E Mus. Baron von Hügel.*

*a*, *pullus.* Sarepta (*Möschler*).

*E Mus. Salvin and Godman.*

*a*, *ad.* Norway.



DEMOISELLE CRANE.

GRUS VIRGO

# GRUS VIRGO.

(DEMOISELLE CRANE.)

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*The Demoiselle of Numidia*, Edwards, Nat. Hist. Birds, iii. p. 134, pl. 134 (1750).
*Ciconia Grus Numidica, Virgo Numidica vulgo dicta*, Briss. Orn. v. p. 388 (1760).
*Ardea virgo*, Linn. Syst. Nat. i. p. 234 (1766, ex Edw.).
*La Demoiselle de Numidie*, Buff. Hist. Nat. Ois. vii. p. 313 (1780).
*Grus virgo* (L.), Pall. Zoogr. Rosso-As. ii. p. 108 (1811).
*Anthropoïdes virgo* (L.), Vieill. Nouv. Dict. ii. p. 163 (1816).
*Scops virgo* (L.), G. R. Gray, List of Gen. of B. p. 86 (1841).

*Demoiselle de Numidie*, French; *Grulla moruna*, Spanish; *Damigella di Numidia*, Italian; *Damigella*, Maltese; *Jungfern-Kranich*, *numidischer Kranich*, German; *Maloï-Juravl*, *Krassawka*, Russian.

*Figuræ notabiles.*

Edwards, *l. c.*; D'Aubenton, Pl. Enl. 241; Naumann, Vög. Deutschl. taf. 232; Sundevall, Svensk. Fogl. pl. 77. fig. 4; Gould, B. of Eur. pl. 272.

*Ad.* pileo, nuchâ et lineâ in collo postico, corpore suprà et subtùs plumbeo-cinereis vel cæruleo-cinereis: collo cum capitis lateribus saturatè nigris, plumis in collo imo antico cum pectore superiore valdè elongatis et acuminatis: plumarum fasciculo utrinque pone oculos orto, falciformi longissimo laxo albo: remigibus nigris, secundariis cinereo tinctis, intimis valdè elongatis, acuminatis, plumbeo-cinereis, versus apicem sordidè nigricantibus: rostro olivaceo-fusco, versus apicem rubente: iride rubrâ: pedibus nigris.

*Adult Male* (Volga). Crown, nape, a line down the hind neck, upper parts generally, lower breast, and underparts, together with under wing-coverts, ashy blue-grey, or dark French grey; sides of the head, throat, and neck deep black; feathers on the upper breast black, elongated, and pointed, some few on the lower portion, however, being dark grey; from behind the eye on each side is a full white tuft of feathers from four to five inches in length; quills black, the inner short secondaries tinged with grey, the innermost secondaries very long, pointed, coloured like the back, except towards the terminal portion, where they are blackish; tail rather darker than the back; legs black; iris deep reddish; bill olivaceous brown, becoming reddish towards the point. Total length about 31 inches, culmen 2·8, wing 19·2, tail 7·5, tarsus 7·5.

*Adult Female* (Volga). Resembles the male, but is a trifle duller in colour, and the white tufts on the sides of the head are smaller.

*Young.* In general coloration much the same as the adult; but the colours are very much duller, the head and neck are almost entirely plumbeous grey, the white tufts on the sides of the head are smaller and greyish, and the innermost secondaries and elongated feathers on the lower neck are much shorter.

*Young in down* (Sarepta). Covered with short, close, dull-creamy white down, darker and more of a warm creamy tinge on the upper parts.

Although found chiefly in Southern and South-eastern Europe, the present species has more than once straggled as far north as Scandinavia and the British Isles. In Africa it has been met with as far south as Natal; and in Asia it ranges eastward to China.

The only recorded occurrence of the Demoiselle or Numidian Crane in Great Britain is that of one which was shot at Deerness, near Kirkwall, on the 14th of May, 1863, and is now in the collection of W. Christy Horsfall, Esq., of Horseforth-Low Hall, near Leeds, Yorkshire. Nilsson states that early in June 1857 an example was shot in Sweden, in Askers Parish, Nerike, by Mr. C. Dalin, a student, and is now in the museum at Örebro; and Dr. Sundström, of Stockholm, informs me that a second specimen was shot at Böö, near Strömstad, in May 1874, and was presented to the museum of that town.

So far as I can ascertain, there is no authentic instance of its capture in North Germany; but, according to Naumann, one is said to have been shot in Upper Silesia very many years ago, and he adds that one was certainly obtained in Heligoland in April 1837. This Crane does not appear to have straggled to Holland, Belgium, or France; but Degland and Gerbe say that it is of accidental occurrence in Switzerland and Piedmont. Nor do I find it recorded from Portugal; but in Spain, Colonel Irby writes (Orn. Str. Gibr. p. 182), "I failed to meet with this Crane near Casa Vieja, but strongly suspect that in some seasons it nests there; indeed a pair of Crane's eggs that were brought to me were so small that I could not refer them to *Grus communis*; but I could, of course, obtain no reliable information about them. Indeed an egg unidentified is worse than useless to the ornithologist; and unless the collector takes and identifies specimens himself, he had better leave them alone. In the marismas of the Guadalquivir there is no doubt that in former years the present species used frequently to breed. Specimens are often to be obtained at Seville during March, April, and the early part of May, and again in August. Judging from this, they must nest somewhere a little further north." According to Mr. Saunders it is by no means rare, though less numerous than *Grus communis*, and leaves in April, not remaining to breed in any part of Andalucia, beyond which province it is almost unknown; and Lord Lilford writes to me as follows:—"I cannot speak with complete certainty of having seen this Crane in Andalucia, though I have very little doubt on the subject. It occurs not uncommonly in the marisma; and I have received several specimens from the neighbourhood of Seville, where it is sufficiently well known to have earned a local name; for it is there called *Grulla moruna*."

In Italy the present species is but a rare straggler. Savi says that one is said to have been killed in Tuscany in 1828; and Doderlein believes (judging from the description of the bird) that one was obtained in 1833 by Signor Martines, a sportsman of Palermo; but neither of these specimens is now to be found for reference. Mr. C. A. Wright states (Ibis, 1864, p. 142) that it is of accidental occurrence in Malta, where two or three examples are said to have been obtained, the last recorded having been killed in March 1861.

So far as I can ascertain, the Demoiselle Crane does not visit Southern Germany, and it is only met with rarely in Greece during the two seasons of passage; but in the countries skirting the Lower Danube it is quite a common summer resident, and breeds numerously in the Dobrudscha, as also in the steppes of Southern Russia, being quite abundant near Sarepta, on the Lower Volga. Dr. Krüper met with it, though early, in Asia Minor, and mentions that he saw one near Burnabat in April 1863; and Lord Lilford informs me that he observed a small flock

near Larnaca, in Cyprus, in April 1875. Canon Tristram, however, did not notice this Crane during his sojourn in Palestine. In Africa *Grus virgo* has a very wide range. Captain Shelley says (B. of Egypt, p. 264):—"This Crane ranges throughout Egypt and Nubia, but is far less plentiful than the common Crane, and nearly as shy. On the 2nd of April I met with a large flock near Benisouef, when, after in vain trying to stalk them for more than an hour, I obtained a long shot as they flew over my head. I am not aware of having seen them upon any other occasion." According to Messrs. Finsch and Hartlaub, in the cold season vast swarms of these Cranes frequent the Blue and White Nile, Kordofan, Darfur, and the neighbouring districts of the eastern Sudan. They arrive about the middle of October, at which time they are in full moult. It is worthy of note that Mr. R. Hartmann (J. f. Orn. 1863, p. 462) saw a flock in May on sand-banks on the Bahr-el-agraq, in Lower Sennaar, and was assured by the natives that some individuals remain there throughout the rainy season, and small flocks are seen with other waders. Loche says that this Crane breeds in the vast sand plains in Southern Algeria; Mr. Taczanowski saw a few in the desert near Biskra; Mr. Salvin met with it on several occasions towards the eastern extremity of the marsh of Zana; and Canon Tristram, in his notes on the ornithology of N. Africa (Ibis, 1860, p. 76), writes:—"A small flock of this graceful and interesting bird might generally be seen quitting one margin of a salt pond as we approached the opposite edge. My acquaintance being so distant, I can only add my testimony to the truth of their attachment to the Terpsichorean art from the habits of four kept in the courtyard of General Yussuf at Blidah, which I have seen performing a stately minuet in concert for an hour together."

Referring to its occurrence in Tangier, Colonel Irby says (Orn. Str. Gibr. p. 181):—"The only note which Favier has relative to this handsome Crane is that 'it is scarce and seldom obtained near Tangier, passing northwards without making any stay, during March, April, and May.' Favier's successor at Tangier evidently considered this species a rare bird; for he asked fifteen dollars (over £3) for a specimen; and at that price it is likely to continue for some time on his hands. He stated that the local name was 'Bou-gernan' (father of thistles); but if the bird be as rare as Favier implied, how could it bear a local name?" It ranges tolerably far south in Africa; for Dr. Livingstone met with it on the Zambesi, and it has also (Zool. 1875, p. 4510) been observed in Natal.

In Asia the Demoiselle Crane is found as far east as China. Dr. Severtzoff says that it breeds in Turkestan. But it is rare in Sindh; for Mr. Hume remarks that he only once saw it there. According to Dr. Jerdon (B. of India, ii. p. 666), it "is found throughout the greater part of India, is more rare in the extreme south, and is never seen in Malabar or in Lower Bengal: one writer says that it is never met with below Dinapore. It is a cold-weather visitor generally, only coming late in October; and its arrival, like that of the common Crane, is hailed with joy as a sure sign that the cold weather is indeed come. It associates in numerous flocks, from fifty to five hundred, and chiefly frequents the vicinity of rivers, as it invariably, according to my own experience, betakes itself during the heat of the day to rivers to drink and rest, and never to tanks and jheels, as the Sarus and common Crane do. One writer, however, states that he has seen and shot them in a jheel. It is very destructive to grain-fields, especially to wheat, in Central India, and to chenna (*Cicer arietinum*) in the Deccan." Mr. Hume, however, writes

(Stray Feathers, iv. p. 15):—"The Demoiselle Crane occurs in immense flocks all over the plains in the cold weather, arriving about the first week in October. Dr. Jerdon remarks that 'it never betakes itself to tanks or jheels during the day;' this is an erroneous impression, as I have seen tanks fringed with a blue margin of these birds at least sixty yards wide, and extending over several acres of ground, over and over again."

It is found in Southern and South-eastern Siberia, where it breeds. According to Dr. Radde these Cranes arrived at the Tarei-nor in large numbers on the 24th April (O. S.); on the 24th May they were paired; and on the 27th July young unfledged birds were seen between Altansk and Bukukun, on the southern slope of the Apfelgebirge, at an altitude of 3500 feet above the sea-level. He met with these birds also at the headwaters of the Jenesei, on a flat steppe-like piece of ground near the Kossogoll lake, at an altitude of 5400 feet. On the 13th August they collected in flocks at the Tarei-nor; and most left in the night of the 15th August, only a few remaining till the 22nd; and by the 30th of that month all had gone. Dr. Dybowski, who has frequently obtained it in Dauria, says (*fide* Taczanowski, J. f. O. 1873, p. 100), it is "not uncommon in Kultuk during the time of migration; it nests in the valley of Irkut, near the Changinskish military post, arriving in the first half of May, and leaving again from before the middle of August to the middle of September; we have seen single individuals till the 25th inst. It is commoner in the vicinity of Darasun, where it is found breeding. It nests on the rocky banks of rivers, and rarely on bare mountains. The nest is made of small stones, fitting close to each other; the surface of the nest is flat, or deepening somewhat towards the centre; it chooses sometimes a place which is a few inches higher than the surrounding ground, and fills up all the crevices and openings with stones. We have seen eggs in June and till the middle of July." Colonel Prjevalsky remarks (in Rowl. Orn. Misc.):—"It is the only Crane that breeds in Mongolia, not only in the fertile districts, but also in the deserts of Ala-shan, where they frequent the wells, visiting them regularly to quench their thirst. This they usually do after the Mongols have driven their cattle to drink, and when small puddles are left by the latter at the edge of the well. When living in the desert their food consists principally of a species of *Phrynocephalus* (sp. nov.), which is very abundant there. They arrive in Mongolia in spring, about the end of March, and leave early in September. Only a single flock appeared at Koko-nor on the 28th February, after which we never met with any there; but we saw a large flock, on the 16th September, in Kansu, on migration, in company with *Grus communis*. It does not occur in the Ussuri country." Père David remarks that he never observed it on the great plain of Pekin, but that it is numerous on the western frontiers of China.

In general habits the present species does not differ much from the common Crane. I have only seen it at a distance when on the Southern Danube, and have therefore had no opportunity of personally observing its habits. Von Nordmann has given (in Démidoff's Voy. Russ. mérid. iii. p. 268) one of the best accounts of it, which I translate as follows:—"The Demoiselle Crane is a migrant in Southern Russia, arriving early in March, and leaving in large flocks for the south about the middle of September. When on passage these flocks fly very high, and form a figure like the common Crane does. The individuals change places frequently, and often utter their trumpet-like call *kroaaou-kroaaou*; and not unfrequently their cries alone indicate the presence of these flocks, which are passing out of sight. The largest flock of *Grus virgo* I have

observed consisted of two or three hundred individuals. The flight is like that of *Grus communis*, the wings being flapped regularly and softly; and every now and again they soar with outstretched, apparently motionless wings. Arrived at the end of their journey, they remain together in flocks for some time; and even when paired they reunite in the morning and evening, especially in still weather, and perform evolutions and amuse themselves by dancing in company. For this purpose they select some suitable place in the steppe, usually a flat space on the banks of a stream (as, for instance, the Salghir, in the Crimea), where they arrange themselves in a circle, or in one or more rows, and commence their games and curious dances, which astonish the spectators not a little. They dance and jump towards each other, bowing themselves in a most burlesque manner, bending their necks forward, extending the plumes on the neck, and depressing their wings; others again in the meanwhile run races, and on arrival at the goal return striding along gravely and quietly, whilst the rest of the assemblage greet them with reiterated cries, inclinations of the head, and other demonstrations. After continuing these exercises for some time, they rise in the air and, flying slowly, describe circles like *Grus communis* and *Ciconia alba*. After the lapse of a few weeks these assemblages no longer take place; and the birds are then seen only in pairs." Von Heuglin, writing on its habits as observed by him in North Africa, says (Orn. N.O.-Afr. p. 1256):—"This Crane migrates both by day and at night, each flock passing, as a rule, not far from the river, high up in the air, in a single or several broken lines, uttering a loud, harsh, trumpet-like call-note, which sounds like the word *Rahó*. The scattered flocks take up their quarters on sandbanks, islands, and bare patches between rainwater ponds or swamps, from which in the early morning they wander many miles into the steppe and amongst the high 'durrah' and grass; they devour grain, grasshoppers, worms, and also, it is said, lizards and snakes. About ten o'clock in the forenoon I have seen immense flocks hurrying from the steppe to the rainwater ponds and rivers; but some few flocks remain all day in the maize-fields, where, in spite of the sentinels which they post, they are not difficult of approach; and when a flock of several hundred birds rises up, the sound of the multitude of wings and the confused voices of the birds is almost deafening."

Artzibascheff, who says (Exc. Orn. Sar. p. 72) that it breeds abundantly near Sarepta, gives some details respecting its nidification, which I translate as follows:—"This Crane does not take the trouble to make a nest, but scratches a small hole in the ground, in which it deposits, about the middle of April, one or two eggs. In searching for the eggs of this species I have often admired the keen sight of the Calmucks and some of my native collectors, without whom I should have had great trouble in finding them. The male always posts himself on the watch near where the female is sitting, and is so shy that, as soon as he perceives any one approach within about six hundred yards or thereabouts, he immediately utters a cry of alarm, which at once rouses the female; and both move off in different directions, and pretend to be catching insects with the greatest tranquillity, as if to show that they have no nest near there. In order to find the eggs, it is necessary to mark the place where the female rose, and not lose sight of it for an instant; but to do this, at so great a distance, one needs the eyes of a Calmuck; so that without the assistance of these marvellously gifted men I should have had to give up all hope of finding the eggs of this Crane, except by chance. More than once I have caught this bird in a trap placed close to the nest, but almost always the male, who it appears is usually the first to visit

the nest. I have on several occasions witnessed the peculiar saltatory exercises performed by these birds; and most frequently the males are the performers in this strange ballet. I may remark *en passant* that the common Crane also indulges, though rarely, in this strange amusement."

The eggs of the Demoiselle Crane differ from those of the common Crane in being rather smaller, and, as a rule, darker and more clearly marked; but they vary a good deal *inter se.* Those in my collection, from the Lower Volga and Dauria, vary in size from $3\frac{2}{40}$ by $2\frac{5}{40}$, and $3\frac{14}{40}$ by $2\frac{1}{40}$ to $3\frac{21}{40}$ by $2\frac{8}{40}$ inches.

The specimen figured is an adult male from the Volga, in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀, *c*, *pull.* Sarepta, Volga (*Dr. Stader*). *d*, ♂ *ad.* Seville, Spain (*Ruiz*).



E. Neale del

W. Hart lith.

SIBERIAN CRANE

GRUS LEUCOGERANUS

# GRUS LEUCOGERANUS.

(SIBERIAN CRANE.)

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*Grus leucogeranus*, Pall. Reise Russ. Reichs, ii. Anhang, p. 714 (1773).
*Ardea gigantea*, S. G. Gmel. Reise durch Russl. ii. p. 189 (1774).
*Grus gigantea* (Gmel.), Vieill. Nouv. Dict. xiii. p. 558 (1817).
*Grus leucogerana* (Pall.), Temm. & Schl. Fauna Jap. p. 118 (1850).
*Grus leucogeranos* (Pall.), Temm. & Schl. op. cit. pl. 73 (1850).
*Antigone leucogeranus* (Pall.), Reich. Syst. Av. pls. 214, 217 (1852).
*Leucogeranus giganteus* (Gm.), Bp. Cat. Parzud. p. 9 (1856).

*Belöi-Jourawl*, *Sterkh*, Russian.

*Figuræ notabiles.*

Temm. Pl. Col. 467; Gould, B. of Eur. pl. 271.

*Ad.* albus, remigibus primariis nigris, secundariis et scapularibus elongatis: facie nudâ rubrâ: rostro umbrino, versus basin rubro: iride pallidè flavâ: pedibus rubro-incarnatis.

*Juv.* facie haud nudâ: capite et collo superiore ferrugineo-cervinis, mento et gulâ pallidioribus: corpore reliquo (primariis et tectricibus superioribus exceptis) cervino et rufescenti-cervino, albo notato.

*Adult Male* (N.W. India). Entire plumage pure white, except the primaries, which are black; inner secondaries and scapulars elongated, extending about three inches beyond the primaries; fore part of the head to behind the eye naked, with a few sparsely scattered hairs; bill umber-brown, the membrane of the nasal groove and the basal portion of the bill red; the bare part of the head dull red; iris bright pale yellow; legs dull pale reddish pink. Total length about 52 inches, culmen 7·4, wing 23·4, tail 8·0, tarsus 10·9.

*Adult Female.* Resembles the male, but is smaller.

*Young* (*fide* Hume, Ibis, 1868, p. 39). No bare space about the face; but this part is browner and dingier; head and upper neck rusty buff, clearest and deepest on the cheeks and top and back of the head, and very pale on the chin and throat; rest of the plumage (excepting the primaries and greater coverts and winglets) buff, in some places brighter and more rufous, in others duller and sandier, with white everywhere beginning to peep through; bill dark reddish brown, before the nostril becoming greenish brown; legs and feet duller than in the adult.

This magnificent Crane is only a rare straggler from Asia to Eastern Europe. Pallas writes that he saw two near St. Petersburg in April; and Artzibascheff (Excurs. Orn. Sarpa, p. 74) says that this Crane is rare near Sarepta, but occurs more frequently at the mouth of the Volga on passage. When travelling through the Calmuck steppes he observed several on the shores of

Lake Barbantzak. According to Professor von Nordmann this Crane frequently occurs in the Ekaterinburg Government, and is met with regularly on the spring passage. Beyond these I find no record of its occurrence in Europe; but it appears to be widely distributed in Asia, breeding in the north central portions, and migrating down into India and Northern China in winter. Dr. Jerdon states (B. of India, ii. p. 664) that it is a rare winter visitant to several parts of North-western India, and has been occasionally observed by sportsmen in the Punjab, Rajasthan, and in the interior of the Himalayas. Dr. Severtzoff records it as occurring rarely on passage, and perhaps breeding in Turkestan; and Pallas says that it occurs throughout Siberia, and that it was seen by him on the Lena and in Dauria. Von Schrenck believes that he saw it on several occasions in the Amoor country, but never succeeded in shooting one; and Dr. Radde says that it is rather rare in North-east Mongolia, but breeds there. He met with it near the Uldsa river, where it arrived on the 11th (23rd) April. Above the Bureja Mountains he saw it on the plains as early as the 24th March. In the autumn he saw two large flocks migrating on the 20th August on the Tarei-nor. He did not observe it in the Eastern Sajan and Lake Baikal.

Père David says that it occurs in Mantchuria and in Northern China, but it is very rare in the latter country; and Colonel Prjevalsky writes, in his article on the birds of Mongolia (in Rowley's Orn. Misc.), that he only saw a flock of some fifty individuals (on the 9th of October 1872) near Koko-nor; and he adds that "in the neighbourhood of Lake Hanka it arrives towards the end of March in small flocks of from four to ten individuals, and is not common there, this being especially the case in summer, as but few remain to breed in that locality. Its voice is very harmonious." It is also found in Japan; but whether commonly or not I am unable to say with certainty.

Comparatively speaking, but little has been written on the habits of this bird; and I am therefore glad to be able to avail myself of an an excellent article by Mr. A. O. Hume (Ibis, 1868, pp. 28–40) on the subject. This gentleman writes (*tom. cit.* p. 28) as follows:—"Sixteen years have now elapsed since I first shot one in Ladakh (in the Himalayas). This was in October: and the birds were doubtless then on their way to the plains of India. They arrived at the lake near Ley, close to which I was encamped, towards nightfall; and though, after I had fired at them and secured a specimen, they again settled at some distance, they took their departure next morning before noon without being further molested. At the time I was unfortunately too much of a mere sportsman and too little of a naturalist to take much note of a bird which had nothing gamelike in its plumage, and which proved unfit for the table.

"Years passed away, during which (gun in hand though I always was when I could spare the time or could get leave) I never once met with a single specimen of the bird. Soon after the mutiny, however, in 1859, I succeeded in shooting one out of a flock of some five-and-twenty, which I found in a large 'jheel' or shallow rain-water lake, in the north of the Etawah district, about halfway between Agra and Cawnpore.

"During the winters of 1865–66 and 1866–67 I have procured and preserved a number of specimens in the same neighbourhood, and have had many opportunities of watching them pretty closely.

"They are very probably found during the cold weather in suitable localities throughout

the plains of the north of India; but the only place where I have observed them, out of the Himalayahs, is in a tract of country lying to the north of the Etawah and south of the Mynpoorie districts, in the middle of the 'Duab,' or *Mesopotamia*, of the Ganges and Jumna, and, as I said before, about halfway between Agra and Cawnpore.

"That they themselves are rare, and that localities suited to their tastes are not numerous, may be inferred from the fact that, apparently, Dr. Jerdon, when he published his work, had never seen one; while, as far as I know, until I last year sent a pair to Madras, there were no specimens in any of our museums. The locality in which, during these last two winters, I have seen and procured, comparatively, so many of these beautiful birds is somewhat peculiar. A broad straggling belt of Dhak (*Butea frondosa*) -jungle, some ten miles in width—at one time doubtless continuous, but now much encroached upon and intersected in many places by cultivated lands, runs down through nearly the whole of the 'Duab,' marking, I suspect, an ancient river-course. Just where the northern and southern boundaries of the Etawah and Mynpoorie districts lie within this belt, the latter encloses a number of large shallow ponds or lakes ('jheels,' as we here term them), which, covering from two hundred acres to many square miles of country each at the close of the rainy season, are many of them still somewhat imposing sheets of water early in January, and some few of them of considerable extent even as late as the commencement of March. Mohree Southenan, Mamun, Sirsau Nawur, Kurree, Beenan, Soj, Hurrera, Suman, Kishnee, Phurenjhee are some of the largest of these rain-water lakes, many of which abound with rushes and sedges, and, as the waters gradually dry up or are drawn off for irrigating-purposes, become successively the favourite haunts of the White Crane.

"There will always be at any particular time two or three 'jheels' that for the moment they particularly affect; and these are as a rule just those that then happen to average about eighteen inches to two feet in depth, and that have a good deal of rush (*Scirpus carinatus* amongst others) somewhere in the shallower parts.

"To this tract of country they make their way as early as the 25th of October (and possibly sooner, though this is the earliest date on which I have observed them); and there they remain at least as late as the end of March, or perhaps a week or two longer. During the whole of our cold season they stay in this neighbourhood; and though growing more and more wary (if possible) each time they are fired at, and disappearing for a day or two from any 'jheel' where an attempt has been made to kill or capture them, they never seem to forsake the locality until the change of temperature warns them to retreat to their cool northern homes. Week after week I have noticed, and repeatedly fired at, sometimes even slightly wounded particular birds, which have nevertheless remained about the place their full time; nay, I have twice now killed the young bird early in the season, and the parents, one by one, at intervals of nearly a couple of months.

"The Buhelias, a native caste of fowlers (and, I fear I must add, thieves), of whom there are many in the neighbourhood, and who are keen observers of all wild animals, assure me that, as far back as any of them can remember (namely, for at least the last fifty years), parties of the White Crane (or, as they call them, '*Karekhurs*') have been in the habit of yearly spending their winters in the same locality.

"Though occasionally in larger flocks, it is usual to find either a pair of old ones accompanied by a single young one, or small parties of five or six, which then, as far as I can judge,

consist exclusively of birds of the second year." At p. 32 he further writes, "the watchful care and tender solicitude evinced by the old birds for their only child is most noticeable. They never suffer the young one to stray from their side; and while they themselves are rarely more than thirty yards apart, and generally much closer, the young, I think, is invariably somewhere between them. If either bird find a particularly promising rush-tuft, it will call the little one to its side by a faint creaking cry, and watch it eating, every now and then affectionately running its long bill through the young one's feathers. If, as sometimes happens, the young only be shot, the old birds, though rising in the air with many cries, will not leave the place, but for hours after keep circling round and round high out of gun- or even rifle-shot, and for many days afterwards will return apparently disconsolately seeking their lost treasure.

"Like the Sarus, these birds pair, I think, for life; at any rate, a pair whose young one was shot last year, and both of whom were subsequently wounded about the legs, so as to make them very recognizable, appeared again this year, accompanied by a young one, and were at once noticed as being our wary friends of the past year by both the native fowlers and myself. I was glad to see they were none the worse for their swollen, crooked, bandy legs; and this year at least they have got safe home, I hope, with their precious charge.

"The worst of ornithology is having to kill birds like these. For birds of prey that one shoots so often in the act of tearing some helpless innocent victim to pieces, one has little compunction; but with gentle vegetable-eating birds like these, who seem to love each other so well, and so much, and who for so long evince their sense of the loss of any of the family party, the case is different, and no feeling man can kill any of them, I think, without a pang. As for myself, nothing but the rarity of these birds, the paucity of information in regard to them, and their being *desiderata* in so many important museums, could have induced me to kill so many of them as I have; and I sincerely hope I shall never need to kill another. I do not know how it is; but I have often wished that I could be quite sure that the wholesale murder of these and similar innocent animals merely for scientific purposes, and not for food, was quite right. Intellectually, I have no doubt on the subject; but somehow, when a poor victim is painfully gasping out its harmless life before me, my heart seems to tell me a somewhat different tale.

"Throughout their sojourn here, the young remain as closely attached to their parents as when they first arrived; but, doubtless, by the time the party return to their northern homes the young are dismissed, with a blessing, to shift for themselves.

"Long before they leave, the rich buff or sandy colour has begun to give place to the white of the adult plumage, and the faces and foreheads, which (as in the common Crane) are feathered in the young, have begun to grow bare. This, I notice, seems to result from the barbs composing the vanes of the tiny feathers falling off and leaving only the naked hair-like shafts. Even when they leave us, however, there is still a good deal of buff about the head, upper back, lesser and median wing-coverts, longer scapulars, and tertials of the young, while the dingy patch along the front of the tarsus is still well marked.

"Each year several small parties of birds are noticeable unaccompanied by any young ones, and never separating into pairs. These, when they first come, still show a few buff feathers, and have a dingy patch on the tarsus; and though before they leave us they become almost as purely white and have almost as well-coloured faces and legs as the old ones that are in pairs, they

never seem to attain to the full weight of these latter. From these facts I am disposed to infer that these parties, which include individuals of both sexes, consist of birds of the second year, that our birds do not either breed or assume their perfect plumage till just at the close of their second year, and that, like Pigeons and many others, they do not attain their full weight until they have bred once at least.

"Unlike the four other species of Crane with which I am acquainted, and which I have above mentioned, *Grus leucogeranus* never seems to resort, during any part of the day or night, to dry plains or fields in which to feed; and, unlike them too, as far as my experience goes, it is exclusively a vegetable-eater. I have never found the slightest trace of insects or reptiles (so common in those of the other species) in any of the twenty-odd stomachs of these White Cranes that I have myself examined.

"Day and night they are to be seen, if undisturbed, standing in the shallow water. Asleep, they rest on one leg with the head and neck somehow nestled into the back; or they will stand like marble statues, contemplating the water with curved necks, not a little resembling some white Egret on a gigantic scale; or, again, we see them marching to and fro, slowly and gracefully feeding amongst the low rushes.

"Other Cranes, and notably the common one and the Demoiselle, daily pay visits in large numbers to our fields, where they commit great havock, devouring grain of all descriptions, flower-shoots, and even some kinds of vegetables. The White Crane, however, seeks no such dainties, but finds its frugal food, rush-seeds, bulbs, corms, and even leaves of various aquatic plants, in the cool waters where it spends its whole time.

"Without preparations by me for comparison, I hardly like to be too positive on this score; but I am impressed with the idea that the stomach in this species is much less muscular than in any of the others with which I am acquainted. The enormous number of small pebbles that their stomachs contain is remarkable. Out of an old male I took sufficient very nearly to fill an ordinary-sized wineglass, and that, too, after they had been thoroughly cleaned and freed from the macerated vegetable matter which clung to them. These pebbles were mostly quartz (amorphous and crystalline), greenstone, and some kind of porphyritic rock; the largest scarcely exceeded in size an ordinary pea, while the majority were not bigger than large pins'-heads. Perhaps, in the hands of some abler mineralogist than myself, these tiny fragments (of which I have a small bagfull) may prove to contain as yet unnoticed mineral forms from Central Asia.

"I have found similar pebbles in the stomachs of the Grey and Demoiselle Cranes, but never in anything like such numbers as in those of the present species.

"When not alarmed, the White Crane's note is what, for so large a bird, may be called a mere chirrup; and even when most alarmed, and circling and soaring wildly round and round, looking down upon the capture of wounded offspring or partner, their cry (a mere repetition of the syllables 'Karekhur') is very feeble as compared with that of any other of the Cranes (including even *Balearica pavonina*) whose notes I have myself ever heard.

"An examination of the trachea of a fine male that I dissected on the 22nd of February this year (1867), at once explained this feebleness. Instead of a convolution entering and running far back into the sternum, there is merely a somewhat dilated bend just where the windpipe enters the cavity of the body; and it is only after the pipe has divided (which it does

symmetrically) into two very nearly equal tubes, about three inches before entering the lungs, that the rings are at all strongly marked, or that the tube impresses one as at all powerful.

"I have already noticed that it is not easy to get at these birds (possibly due in part to a keen sense of hearing accompanying their large ear-orifices); and, as far as my experience goes, there is only one way of shooting them with a shot-gun. With a rifle it is not difficult to get within two hundred and fifty to three hundred yards of them, at which distance, with a heavy 442 match rifle, one ought to knock them over every time. The melancholy fact, however, is, that habitually one only succeeds in missing them and thoroughly scaring them with a rifle; so nothing remains but to have recourse to a long single eight-bore with BB green cartridge. This will easily knock them down up to seventy, or, if a shot tells well in the neck, up to eighty yards; but getting within eighty or even a hundred yards of them can only be managed, as a general rule, in one way. You obtain from one of the native fowlers the loan of a trained Buffalo, and enter the water a good quarter of a mile away from the birds, under cover of the quadruped. It has, as usual, a string run tightly through the nostrils and tied together behind the horns. You hold this string where it lies across the cheek with the left hand; your extended left arm is hidden behind the neck; your whole body is bent, so that your head and neck are covered by the Buffalo's shoulders, your body and the greater part of your legs by its body. Only your legs to a little above the knees show close to the hind legs; and as far as possible you always keep the beast up to his belly in water. Thus covered you slowly sidle up towards the Cranes, making the Buffalo now put his head up, nose in air, now stop and lower his head to the water, and generally dawdle and meander about with apparently no fixed idea in his head, according to the natural manners and customs of a free and independent buffalo. With a little practice it is easy thus to get within shot. You softly let the cheek-string go, and at once fire below the buffalo's neck. Before your gun is well off, your sporting companion, who has a marked distrust of Europeans and white faces, and has been incessantly endeavouring to kick you throughout your whole promenade, knocks you head over heels, and rushes off towards his dusky owner, bellowing as if he, and not you, were the injured party. This is firstrate sport; but, after trying it once or twice, nearly catching my death of cold, losing a powder-flask, and realizing a stock in trade of bruises enough to last the rest of my natural life, I have preferred sitting quietly on the bank and allowing my native coadjutors to shoot the birds I wanted.

"When shot they are worth nothing as food; which, considering their diet here, is not surprising.

"In Europe, nowadays, the common Crane is not thought worth eating, and people wonder at our ancestors esteeming them as they did; but the reason of this is obvious. In former days, when they were so numerous in Norfolk and other English counties, they used, I apprehend, to arrive at the time of wheat-harvest, and feed exclusively on grain. Grain-fed Cranes are delicious. The common Cranes that have lately left us, and which, for two months, had been daily gorging themselves in our fields on grain of various kinds, were fat, juicy, tender, and delicately flavoured —in fact, to my mind, with the exception of a Florican (*Otis deliciosa*), or one of our Norfolk Pheasants, about as good birds as can be put on the table, and this although five or six months before, when they first arrived, they were stringy, tough, lean, fishy things, not worth eating, or shooting even, except for plumes.

"I ought not to omit to notice that, out of more than twenty specimens of the White Crane that I have procured (between October and the middle of March), none had the tertials at all conspicuously elongated; and in no instance did these, when the wings were closed, exceed the tail-feathers or longest primaries (which usually reach just to the end of the tail) by more than 3 inches. It is possible that at the breeding-season the tertials may be much more developed; but such is not the case with the Sarus, nor, I fancy (to judge from the magnificent trains of plumes with which we here shoot them in winter), with the common Crane.

"The feathers of the hind head and nape are somewhat lengthened, so as to form a full and broad though short subcrest, very noticeable when a wounded bird is defending itself against dogs or other assailants. It is a brave bird, and fights to the last, striking out powerfully at times with bill, legs, and wings, but most generally defending itself chiefly with its bill, with which it inflicts occasionally almost serious wounds."

I find no particulars on record respecting the breeding-habits of this bird. Mr. Hume says that the birds when they arrive in India are never accompanied by more than one young bird to each pair, from which it would appear that they lay but one egg; but probably, like most of their congeners, two will be the normal number.

The specimen figured and described is an adult bird in winter dress from North-west India, for which I am indebted to my friend Mr. W. E. Brooks, C.E.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* N.W. India, winter (*W. E. Brooks*).

*E Mus. H. B. Tristram.*

*a*, *ad.* N.W. India.

# Order IV. LIMICOLÆ.

## Family OTIDÆ.

### Genus OTIS.

*Otis*, Linnæus, Syst. Nat. i. p. 264 (1766).
*Psophia* apud Jacquin, Beitr. Gesch. Vög. p. 24 (1784).
*Tetrax* apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 28 (1816).
*Atix* apud Werner, Atlas, Coureurs, pl. 4.
*Houbara* apud Bonaparte, Sagg. Distrib. metod. Anim. Verteb. ed. 2, Agg. e Corr. p. 142 (1832).
*Chlamydotis* apud Lesson, Rev. Zool. 1839, p. 47.
*Eupodotis* apud G. R. Gray, Gen. of B. iii. p. 533 (1845).

The Bustards must, I think, be placed near to the Plovers, though they have some affinity to the Gallinæ, and have, indeed, been included in that group by some authors. The genus is represented in the Palæarctic, Ethiopian, Indian, and Australian Regions, four species being found in the Western Palæarctic Region, two being resident and the other two mere stragglers from Asia and Africa. A fifth species, *Otis arabs*, L., has straggled into the extreme south-western portion of the Western Palæarctic Region; but as it is essentially an Ethiopian species, I have not deemed it advisable to include it.

The Bustards frequent open ground, preferring grassy plains and cultivated ground, and avoiding localities which are studded with bushes, which would prevent them from having a clear view of the surrounding country. They are very wary and difficult of approach; and it is therefore no easy matter to stalk them. They walk and run with ease, and fly much faster than one would suppose, judging from their large size. They feed on the leaves and shoots of plants, and to some extent also on insects. They are polygamous; and in the spring the males fight furiously for the possession of the females, which remain with them only until they have to commence nidification. Their nests are mere depressions in the ground, very scantily lined; and the eggs, which are numerous, are dull brownish olivaceous, or olive-green, more or less spotted and blotched with dark brown. The female alone attends to the incubation of the eggs and the care of the young, which when hatched are covered with soft down; and though at first rather helpless, they are soon able to run, and hide if suddenly disturbed and frightened.

*Otis tarda*, the type of the genus, has the bill shorter than the head, rather stout, broader than high at the base, compressed towards the end, which is narrowed but blunt; gape-line slightly arched; nasal sinus large, filled by a membrane which is feathered at the base; nostrils oblong, direct, slightly operculate, nearly basal; wings long and full, the third quill longest, the first being about equal to the fifth; tail short, composed of twenty feathers; legs long, the tibia bare for about one third of its length, covered with oblong scales, the tarsus being also similarly scaled; toes three in number, rather short, and having short basal webs; claws short, curved, thin-edged, obtuse.



GREAT BUSTARD.

OTIS TARDA

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# OTIS TARDA.

(GREAT BUSTARD.)

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*Otis tarda*, Linn. Syst. Nat. i. p. 264 (1766).
*Otis major*, Brehm, Vög. Deutschl. p. 531 (1831).

*Outarde barbue*, French; *Grosstrappe*, German; *Abutarda*, Spanish; *Batarda*, Portuguese; *Pittarrun*, Maltese; *Trappe*, *Trapgaas*, Danish; *Stora Trappen*, Swedish; *Dropha*, *Doodok*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. pl. 245; Werner, Atlas, *Coureurs*, pl. i.; Gould, B. of Eur. pl. 267; B. of G. Brit. part ii.; Naumann, Vög. Deutschl. pls. 167 (♂), 168 (♀ et pull.); Sundevall, Sv. Fogl. taf. xlvi. figs. 1, 2; Kjærbölling, Dan. Fugle, pls. xxviii., xxix.; Fritsch, Vög. Eur. tab. 36. fig. 5.

♂ *ad.* suprà lætè lutescenti-rufus, conspicuè nigro vermiculatim transfasciatus: tectricibus alarum carpalibus dorso concoloribus, reliquis dilutissimè cinereis latè albo terminatis: remigibus brunneis, extùs cinerascente lavatis, secundariis extimis ad basin albis, interioribus omninò albis, intimis dorso concoloribus latiùs nigro transfasciatis: caudâ rufâ, albo terminatâ et subterminaliter nigro transfasciatâ, rectricibus omnibus basaliter albis, extimis autem ferè omninò albis, versùs apicem tantùm rufescentibus: pileo summo et laterali cum nuchâ dilutè cinereis: collo laterali, cum setis mystacalibus longissimis guttureque toto albescentibus, hôc imo ochrascente lavato: torque collari et collo postico saturatiùs ferrugineis, minutè nigro maculatis: torque angusto pectorali dilutè cinereo: corpore reliquo subtùs albo: rostro plumbescenti-griseo: pedibus grisescenti-brunneis: iride brunneâ.

♀ mari similis, sed multò minor et suprà intensè nigro transfasciata, tectricibus alarum carpalibus pallidioribus et crebriùs nigro fasciatis: pileo toto cum gutture et pectore superiore dilutè cinereis, gulâ albâ: pectore nunquam rufescente.

*Adult Male.* Head pale ashy blue or French-grey; back of the neck rich rufous or yellowish red, almost unmarked; back, scapulars, and lesser wing-coverts yellowish red, banded with black, these bands being largest and most distinct on the apical portion of the scapulars; upper tail-coverts same as the back, but with narrower black bands: tail reddish, greyish white at the base and at the tip, and having a broad subterminal black band, the central feathers also having another band about the middle of the feather; quills blackish, slightly washed with grey on the outer web, and having the shafts white; secondaries white at the base of the outer web, the inner web being almost entirely white; inner secondaries pure white; larger median-coverts and spurious wing greyish white; throat and fore part of the neck greyish white; from the base of the mandible on each side springs a bunch of long bristle-like feathers; lower part of the neck and fore part of the breast reddish chestnut, marked with black, on the upper part fading into yellowish red, forming a distinct pectoral band; below this is a band of pale French-grey; rest of the underparts pure white; bill dull lead-grey, darkening into blackish horn towards the tip; legs dirty earth-grey; iris dark brown. Total length 42 inches, culmen 2·5, wing 26, tail 11, tarsus 6·2.

*Adult Female* (Smyrna, December). In general coloration very similar to the male; but the upper parts are much closer-barred with black; entire head, neck, and upper part of the breast pale French-grey; chin pure white; the bristles on the sides of the throat are wanting, as is also the rufous pectoral band; but the sides of the breast are marked with rufous. In size it is much smaller than the male, measuring—culmen 2·2, wing 19·3, tail 8·1, tarsus 4·6.

*Young in down* (Saratoff, S.-E. Russia, 1871). Upper parts light sandy yellow or pale buff; on the head, back, rump, and base of the wing-joints closely blotched with large black spots; neck and terminal parts of the wing-joints much less blotched than the rest of the upper parts; underparts sandy yellow; neck and sides of the head sparingly blotched with black; thighs blotched on the upper side only; rest of the underparts unspotted.

The Great Bustard is found throughout Central and Southern Europe, eastward into Asia, where it ranges as far as Dauria. In Great Britain it used formerly to be tolerably common, but now it may be looked on as almost extinct, the present overcrowded state of the country and the mode of farming rendering our island unsuitable to this species. Mr. A. G. More writes that it was formerly "well known as inhabiting the downs of the south of England, the heaths in a few of the eastern counties, and the wolds of Yorkshire.

"Its breeding-range included the counties of Wilts, Dorset (*Rev. J. H. Austen*), Hants, Sussex, Suffolk, Norfolk, Cambridge, Lincoln, and Yorkshire. Montagu tells us that 'these birds were formerly found even as far north as Scotland,' where, however, they were probably only accidental visitors.

"Even at the date of Montagu's 'Supplement' (1813) the Bustard had nearly disappeared from the downs of Wiltshire. It seems to have lingered to a considerably later date in Suffolk and Norfolk, where some nests were found in 1832 and 1833 (Loudon's Mag. Nat. Hist. vol. vi. p. 150, vol. vii. p. 458, and vol. ix. p. 528). In Yorkshire the last egg was taken in 1816, and is now preserved in the Museum at Scarborough." Mr. Stevenson, in his excellent article on this species in the 'Birds of Norfolk,' says that, "besides the barren brecks of Norfolk and Suffolk, the Great Bustard, on good authority, appears in former times to have been extremely common on all the open parts of this island which were suited to its habits—the elevated moors of Haddingtonshire and Berwickshire, the desolate wolds of York and Lincoln, Newmarket and Royston heaths on the borders of Cambridge, together with the downs of Berks, Wilts, Dorset, Southampton, and Sussex, being all more or less frequented by it; but in every one of these localities it had ceased to exist before the last of the race of British Bustards fell victims to the advancement of agricultural enterprise in this and the adjoining county.

"Of our local records the earliest in point of date are contained in the published extracts from the household books of the L'Estranges of Hunstanton, where, in the 'Privy Purse Accounts' for the year 1527, we find the following entry:—

"'The xljst weke.

"'Wedynsday. Itm. viij malards, a bustard, & j hernsewe kylled wt ye crosbowe.'

"And, again in the year 1530, among the list of gratuities:—

"'Itm. in reward the xxvth day of July to Baxter's svnt of Stannavgh (Stanhoe) for bryngyng of ij yong busterds, ijd.'

"Nearly a century and a half later Sir Thomas Browne (who died in 1682) describes the Bustard as 'not unfrequent in the champian and fieldy part of the county,' an expression which rather conveys the idea that they were not particularly numerous even at that period; and as, unfortunately, we possess no further notes of its existence in these parts for the next hundred years at least, we come at once to the commencement of the present century, when the gradual, but inevitable, extinction of the species forms the burthen of the story of each successive writer. 'These noble birds,' wrote Messrs. Sheppard and Whitear in 1825, 'still continue to breed in the open parts of Norfolk and Suffolk, though they are becoming much scarcer than formerly. The places most frequented by them are Westacre, in the former county, and Icklingham, in the latter. At both places they are carefully preserved by the proprietors. In the summer of 1819 nineteen of them were observed together at Westacre.' From that time, however, they appear to have gradually, but surely, decreased in both counties, it being a rare event to see more than two or three in company; and in 1832 there is reason to believe that a nest found on the borders of Thetford warren was the last known in Suffolk, and a single bird observed later in the summer of the same year on Icklingham Heath the sole survivor in that once noted locality. Mr. Newton thus refers to the appearance of this solitary bird, 'Mr. Thornhill, of Riddlesworth Hall, in July or August 1832, while walking one hot day across Icklingham Heath, came upon a place where it was evident that some large bird had been rolling and dusting itself in the sand. On examination he found, close by, a Bustard's feather; and looking round him he perceived a hen Bustard not many yards off; and this is the last well-authenticated instance of the occurrence of this fine bird in Suffolk that I am aware of.'

"The late Mr. J. D. Hoy, who, writing in November 1832, recorded the occurrence of the last Suffolk nest in the 'Magazine of Natural History for 1833' (p. 150), also states that the old bird carried off her young in safety, and that a male bird and two females had been recently seen together on the same heath. Subsequently Mr. Newton ascertained from the late Mr. J. D. Salmon (who, with Mr. Hoy, saw the young bird that was hatched from this nest when about half-grown) that the nest was situated in a field of rye, into which the old and young retired when disturbed.

"Norfolk now remained the last of our English counties to reckon the Bustard amongst its resident species; nor was this privilege to be long enjoyed.

"In the spring of 1833, as recorded by Mr. Salmon (Mag. Nat. Hist. 1834, p. 458), 'three females resorted to Great Massingham Heath for incubation. Their eggs consisted of two pairs and a single one. These were taken away under the impression that, as there was no male bird, they were good for nothing;' but this was possibly a mistaken impression, inasmuch as in Spain, where they still abound, the cock birds in Andalucia are known to part company from the hens in the month of May, and, leaving the latter on the uplands, betake themselves to the marshes. Still, however, to quote once more from Mr. Newton's notes, a small flock of hen Bustards, including the parents of the eggs mentioned, continued to occupy the country around Swaffham for some years longer; but there is no record of any cock bird having been observed. It is therefore a sad reflection when we think that had a male bird been procured from the Continent, and liberated in that district, the Great Bustard might still have been an indigenous bird in this country.

"Be this as it may, the hen birds are asserted to have dropped eggs at random, continually, as the season came round, without taking the trouble to form their usual slight nests; and this continued until the year 1838. In the month of February of that year, a female Bustard was brought to the Cambridge market, where it was bought by Mr. Smith, the butler of Pembroke Hall, for Mr. William Borrer, of Cowfold, Sussex, then an undergraduate of Peterhouse, in whose possession it still remains; and that gentleman having taken the trouble of tracing its history, ascertained that this specimen was killed at Dersingham, near Castle Rising, in Norfolk, on the 28th of the preceding January. Later in the same year, 1838, another specimen, also a female, was killed at Lexham, near Swaffham, and sent to Mr. Knight, of Norwich, to be preserved for the late Mr. F. W. Keppel. This bird was found, on dissection, to contain an egg nearly ready for exclusion, and, when examined in the flesh by Mr. J. H. Gurney and others, had the down under the breast-feathers suffused with a most delicate rose-coloured tint, which, according to Yarrell, was also observed in the Dersingham bird, and, if looked for, will probably be found in all specimens. It may even still be open to doubt whether this was really the last killed in England deserving the name of a British Bustard, since in Mr. Dowell's MS. notes I find the following brief but important entry:—'A Great Bustard was killed by Mr. Woods, of Morston, about 1837, and was sent to Lord Charles Townshend.' On further inquiry, that gentleman's son, Mr. W. G. Woods, writes, under date of March 20th, 1865, 'the Great Bustard I took to Lord C. Townshend about twenty-four years since; it was a female, but whether young or old I don't know. I never heard of its being seen there before. It was killed in autumn.' Mr. Dowell, who, I believe, made the entry in his note-book from a verbal statement of Mr. Woods, gives the date of the female as 'about 1837;' Mr. W. G. Woods, however, considers that it was 'about twenty-four years since'—that is to say, from the date of his letter to me in 1865—which would make it some three years later than, instead of one year prior to the Lexham bird. That the former supposition is by no means impossible is further shown by a record in Mr. Lubbock's 'Fauna' (published in 1845), in which that gentleman says, 'one Bustard three years back was observed in the parish of Bridgham, near Harling,' a statement which Mr. Newton, after much inquiry of people in that neighbourhood, is rather inclined to credit, and adds 'whatever it was, though shot at by a gentleman, the late Mr. George Montgomerie (then living in the adjoining parish of Garboldisham), it was not obtained; and hence the uncertainty that exists. I have met with several rumours, each apparently with an independent origin, of a Bustard having been seen in Norfolk about that time (1842), so that I cannot but think there is some truth at the bottom of them.'

"Such, then, in brief, is the history of the gradual and final extinction of this noble species in the eastern counties. In order, however, better to comprehend the causes which led to so unfortunate a result, I have thought it desirable to collect from every available source the scattered records existing of its habits, numbers, and local distribution. Yet, besides such notes as have appeared from time to time in natural-history publications, there remained to be gathered from the evidence of shepherds, warreners, gamekeepers, labourers, and others, still living in localities where these birds had so recently existed, much valuable information; and to this end, commencing in the year 1851, Mr. Alfred Newton and his brother Mr. Edward Newton, then residing at Elvedon, devoted a considerable amount of time and labour, more especially in the

neighbourhood of Thetford, on the borders of Norfolk and Suffolk. Of this 'hearsay' evidence I consider myself most fortunate in being enabled to give a summary, since, having been carefully written down at the time, after conversations held with many of the oldest men, and those most conversant with the now exterminated birds, on the Elvedon and adjoining estates, it contains many interesting facts, which in a few years might have been lost altogether, or, at best, would have survived only in the vague and unsatisfactory form of local traditions.

"During the last hundred years the story of the Bustard in Norfolk and the adjoining parts of Suffolk—for it would be inexpedient here to be restricted by merely civil limits—seems to be this. The open country round Swaffham, and that near Thetford, formed each the headquarters of a 'drove;' for so an assemblage of these birds was locally called. The Swaffham tract, a long narrow range, chiefly lying in the 'breck' district, bounded on the east by the enclosed part of the county, and on the west by the fens, extended probably from Heacham in the north, to Cranwich in the south, if indeed it did not reach by way of Mundford and Weeting across the borders of the county to the Wangford and Lakenheath uplands, which are strictly part of the Thetford or Stow tract, to be presently considered. In this Swaffham tract the drove formerly consisted of, at least, twenty-seven birds, as the Rev. Henry Dugmore, of Beachamwell, informs me that he perfectly remembers (although he cannot recall the exact date) riding on one occasion at Westacre in company with the late Rev. Robert Hamond, and, when walking their horses across the open country, the whole drove of twenty-seven Bustards flew by them within fifty or sixty yards. Mr. Scales also, in the same locality, once saw twenty-three together; and Mr. Hamond, of High House, Westacre, can recollect this drove as numbering twenty-two birds. There can be little doubt, therefore, if earlier information were available, it would be found that in strength this drove was by no means inferior to that which at the same time frequented the other tract. Again, from twenty-three, or twenty-two, this drove subsequently decreased to seventeen or sixteen, then to eleven, at which number Mr. Hamond remembers it long stood, and finally dwindled to five, and two, all accounts agreeing in this, that the last remaining birds were hens only. The cause of this diminution has already been briefly stated in the 'Introduction' to this work (vol. i. pp. li, lii).

"It may, however, be convenient to repeat here that the hen Bustard nearly always laid her eggs in the winter-sown corn, which in former days was, almost without exception, rye, sown broadcast after the old fashion. As the mode of tillage improved, wheat was gradually substituted for rye; and, at the price that grain fetched in those days, the desire of not using more seed than was absolutely necessary brought about the invention of the drill, by means of which corn, thus sown, was capable of being kept free from weeds with much greater facility. First, parties of children were sent into the fields to perform this operation, and then speedier, if not more thorough, execution was obtained by the use of the horse-hoe. Thus every nest made by a Bustard in a wheatfield was sure to be discovered—perhaps in time to avert instantaneous destruction from the horses' feet or the hoe-blades, perhaps (and this probably much the more often) only when the eggs had been driven over and smashed and their contents were pouring out on the ground. But even in the first case, instantaneous destruction being avoided, the eggs were generally taken up by the driver of the hoe (in defiance of the act of 25th Henry VIII., which, though often enforced when smaller and less valuable species were concerned, seems in

the case of the Bustard to have been regarded as a dead letter), and carried by him to his master or mistress. If they were not chilled by the time they reached the farmhouse they were probably put under a sitting hen; for all persons seemed to imagine, till they tried, that the rearing of young Bustards was as easy as the rearing of young Turkeys. If, however, there was no hope of success in this direction, they appear often to have been preserved as natural curiosities, to lie, with grotesquely shaped flints and petrified *Echini* (the 'fairies' loaves' of the district) on the parlour mantelpiece or bookshelf till they met with the usual fate of such fragile articles, though some four or five specimens are known to have escaped all such risks and are actually still in existence. But in either of these cases the result was the same.

"No young birds grew up to fill the gaps made in the ranks of the old ones according to the common course of nature, to say nothing of those caused by occasional violent deaths; for although Mr. Hamond (following the example of his father before him) and most of his neighbours allowed no molestation of the Bustards on their estates, yet there is little doubt that every now and then one fell to the gun, or was caught in the gin of a depredator, while the smaller proprietors were by no means actuated by any feelings for the perpetuation of the stock, and a few of the larger ones occasionally wished to supply themselves or their friends with specimens for their collections or even for edible purposes. Not a thought of the extermination of the species seems to have passed through their minds. Either they were entirely indifferent about the matter, or else they believed that since, as long as they could remember, there had always been Bustards on their brecks, therefore Bustards there would always be. Several of the specimens thus obtained still exist in various collections; and an enumeration of them, with all the particulars of their history now to be obtained, will conclude this notice. It is to be remarked that cock birds are said to have been comparatively scarce in this drove, three being the most that are spoken to by any eye-witness, and, as has just been stated, when the numbers of the drove were much diminished, cocks were entirely wanting. These observations probably refer to the old cocks, which so greatly surpass the hens in size; for it must be remembered that, as is known through foreign observers, the male Bustard is several years in attaining its full growth, and until then it cannot be readily distinguished from the female at a distance."

The last reappearance of the Bustard in England took place in 1870, when one or more small flocks visited our country, and examples were procured in Northumberland, Middlesex, Wiltshire, Somersetshire, and Devonshire. Mr. Cecil Smith, in exhibiting one of the specimens, obtained in the last-named county, before the Somerset Archæological and Natural-History Society, stated that the flock out of which it was shot "appeared on the Braunton Burrows, near Barnstaple, on the 31st December, 1870; the flock consisted of eight, and was first observed in a field near Croyde, where two were killed and one wounded. The remainder of the flock then alighted near some boys who were sliding close to Braunton, who pelted them with stones, upon which the birds flew off, and were not heard of for some days. Subsequently, I believe, the flock was seen near Holsworthy, not very far from the border of Cornwall; but none were obtained there. Of course, so extraordinary an occurrence as that of eight Great Bustards was not passed over in silence by the local press. Accordingly Mr. Gatcombe, who went to Barnstaple on purpose to glean particulars of the event, quotes in the 'Zoologist' the following paragraph from the 'North Devon Journal':—'Wildfowl. During Christmas week a flock of eight Wild Turkeys

visited this parish, and alighted in a field at Croyde. They were seen by Mr. William Smith, who followed and shot one, which weighed upwards of nine pounds, and was much admired. The others soon took their flight to the west, and have not since made their appearance.' Mr. Gatcombe also says that, when at the railway-station, he met a man with some feathers in his hat; and on speaking to him concerning them, he replied, pointing to one of them, 'This here, sir, belongs to one of them Turkey Buzzards.' This notion of Wild Turkeys seems to have prevailed generally in North Devon; for, as one of my labourers has a brother who is a game-keeper somewhere near Barnstaple, I got him to write to his brother to glean any information about the Bustards: his reply was that he had heard of the birds, but that they were Wild Turkeys."

The specimen killed near Feltham, in Middlesex, on the 29th of January, 1871, I had the satisfaction of examining in the flesh when it was brought up to the Zoological Society's rooms by Mr. Tegetmeier, who exhibited it at a meeting of that Society.

In Scotland, Mr. Robert Gray writes, "it has long been extinct. As a resident species it appears to have been entirely confined to Berwickshire; it is thus referred to by Hector Boece, who flourished about 350 years ago:—'Besides these, we have another foule in Mers, more strange and uncouth than all these aforementioned, called a Gustard, fully so great as a Swan, but in colour of feathers and tast of flesh little differing from a Partridge. Howbeit, these birds are not verie common, neither to be seene in all places; such also is their qualitie, that if they perceive their egs to have been touched in their absence by man's hand (which lie common on the bare earth), they forsake those nests and lie in other places.' The occurrence of probably the last Scottish straggler is briefly recorded in Fleming's 'British Animals' in these words:—'One was shot in 1803, in Murrayshire, by William Young, Esq., of Borough Head.'"

In Ireland it was, according to Thompson, enumerated by Smith (1749) as one of the birds of the county of Cork, but it has long been extinct.

It does not appear to have ever occurred in Norway; but, according to Nilsson, it used formerly to breed in many open localities in Sweden, where it is now never met with. "About sixty or seventy years ago (1790–1800) it used to occur on Skanör heath and at Cimmered; but it is now only met with very rarely on the sand-plains round Ahus and Ljungby. It arrives in April, and is then met with in small flocks; and before leaving in the autumn they collect together in large flocks, and near Ahus considerable numbers have occasionally been seen together." This was written by Professor Nilsson some years ago; but it is doubtful if this species now occurs in Sweden. Mr. Meves, indeed, writes to me stating that he has reason to believe it is quite extinct in Skåne. In Finland, Professor Malmgren informs me, it has to his knowledge been obtained but twice, once at Tenala, in 60° N. lat., and once near Ijå, in 65½°. In Northern Russia it does not appear to be found, though, as below stated, it is common in Central and Southern Russia. Mr. L. Taczanowski writes that it is rare in Poland, where a few breed near Zamosö and Miedzyrzeiz, in the Government of Lublin, and near Lowicz and Blonie, in the Warsaw Government, as also near Wyszogrod, in the Government of Plock; in other parts of Poland it is only met with occasionally during migration. When in Pomerania I have seen it on several occasions, and obtained several eggs when near Stettin, where it appears to be by no means of unfrequent occurrence. Borggreve states that it is a partial migrant in the central and

east-central portions of North Germany, and relatively numerous in the open and partially cultivated, though not unpopulated, tracts, as, for instance, on the steppe-like Finerbruch, near Genthin, and near Pyritz in Pomerania; and Mr. E. F. von Homeyer writes that it is more numerous to the eastward than west of Stolp (Pomerania), and no eastern boundary can be drawn for it in Germany. Dr. E. Rey records it as not uncommon near Halle in the winter season. It is most numerous at Roitsch, and near Lochau, Mersburg, Lauchstaedt, Schafstaedt, where, for instance, in the winter of 1870–71 above thirty were shot. It breeds at Roitsch and the Peters-Berg.

It has, Mr. Benzon writes, "but seldom been obtained in Denmark; and the occurrences on record were chiefly in Jutland, of which I may name one in the summer of 1860, that of a female, which was caught and sent to Kjærbölling's Zoological Garden in Copenhagen." In Holland and Belgium it occurs accidentally during the winter season; and De la Fontaine states the same as regards Luxemburg. Godron also states that it is occasionally obtained near Nancy and Metz in the winter. In France this species, according to Degland and Gerbe, "was formerly much more abundant than at present, and great numbers were to be found near Chalons-sur-Marne and throughout the province of Champagne. Now they are only to be found as residents in a few places; but individuals are occasionally killed in various parts of the north of France, especially towards the end of February. Examination of the crops of at least fifty individuals tend to show that this species is almost if not quite herbivorous, the few remains of insects found being attributable to their having been swallowed with the leaves devoured. It is extremely partial to the leaves of rape; but it also partakes, though in smaller quantities, of all kinds of grain." In the south of France it is, MM. Jaubert and Barthélemy-Lapommeraye write, extremely rare.

Professor Barboza du Bocage records it as found in Portugal at Alemtejo and Ribatejo; and the various writers on Spanish ornithology speak of it as common. I saw it near Castellejos, where, however, it is rare compared with some other parts of Spain. Lord Lilford writes as follows:—"On May 26th Manuel knocked down a magnificent male Bustard (*Otis tarda*) which rose at a few paces from the carriage in which we were. We marked him down; and Manuel, after a clever stalk, got within shot, and gave him the contents of both barrels as he rose. He did not appear to be seriously hurt, and attempted to cross the valley of the Tagus; but a violent squall of wind forced him back towards us, and he fell headlong into a field of standing wheat, in which Manuel, Agapo, and his dog sought him in vain for upwards of an hour. This was the only Great Bustard which we met with near Aranjuez; but the species is common in suitable localities throughout Spain, and several eggs were subsequently brought to me from the environs of Madrid. I was assured in Andalucia that a considerable number of Great Bustards remain in the plains about Seville during the whole year, but that they receive great reinforcements in February and the beginning of March, and that the birds which arrive from the south at that season are always the largest, and are distingished by the *cazadores* as '*Moriscos*' In April 1864 I found the Great Bustard in great numbers in the immediate neighbourhood of Seville." And Mr. Howard Saunders speaks of it as "generally distributed over the great plains throughout the country. This species is especially abundant around Seville, residing throughout the year in the 'marisma,' and coming to the cultivated land in breeding-time. The peasants call

the old males 'Barbones' and 'Moriscos,' asserting that they come over in spring from Morocco; but the word is merely a contraction of 'Mariscosos,' from the flavour of 'marisca,' or salt marsh, which their flesh has at that time."

In Savoy it occurs only accidentally; Bailly writes that, during the severe winter of 1829–30, some made their appearance in the neighbourhood of Chambéry. Savi states that it is exceedingly rare in Tuscany; and Doderlein says the same respecting its occurrence in Parma, Modena, &c. In Sicily it occurs but rarely, having principally been met with near Catania and Syracuse; Salvadori writes that he does not think it has ever been resident or bred in Italy, and it has not occurred on the island of Sardinia. In Malta, Mr. C. A Wright states, it is "rare; every two or three years one or two are shot, chiefly in Gozo. It has also been obtained at Marfa (the north-west extremity of Malta) and in the valley of Naxiar. Since 1857 I have known of the capture of five individuals. In the autumn of 1862 I was forestalled in the purchase of a fine male in the market by the Governor's purveyor, who had just secured it for Prince Alfred's dinner. Captain Sperling, in his notes on the ornithology of the Mediterranean, states that it is plentiful, occurring in large flocks on the south shore of the Gulf of Arta in the winter season; and Lord Lilford, referring to its occurrence in the Ionian Islands, says that "a Great Bustard flew over my head one day in February 1858, as I was chasing Grebes in the Bay of Butrinto. This is the only occasion on which I saw this species in these parts; but I was shown some of the feathers of one which had been killed in Acarnania in March 1857; and in the following winter several were killed near Cape Papas, in the Morea, where they are not uncommon. Great numbers were brought into Athens in January 1858. The Great Bustard breeds in the Morea, in the vicinity of Tripolitza." Lindermayer and Baron von der Mühle record it as resident and common in most parts of Greece; and as regards Southern Germany, it is stated to be met with here and there in suitable localities. Fritsch writes that "it occasionally straggles to Bohemia from Hungary; and when in the latter country I often heard of it; but, owing to my short sojourn there, I never saw it in the wild state." In the plains of Wallachia, as I was told when in that country, it is especially numerous in the neighbourhood of Bucharest; but I did not visit the localities where it is most common. Messrs. Elwes and Buckley found it not uncommon in many parts of Turkey, but most numerous in the Dobrudscha. In Russia it is, Mr. Sabanäeff writes, "most essentially an inhabitant of Southern Russia, but during the last eighteen years it has become common in many parts of Central Russia; for instance, it is found in the districts of Elatma and Ardatoff, it breeds in the Government of Riazan (Pronsk), and in the autumn ranges as far as Lerpouchow (in the Government of Moscow)." According to Bogdanoff the Bustard has also been killed in the district of Tetuschi and Swiajhsk, in the Government of Kazan. Mr. Sabanäeff himself found it near Schadrinsk, and states that he believes it breeds there. Mr. Goebel records it as a common migrant in Uman (South Russia), generally leaving for the south in December. In the autumn flocks of several hundred individuals may be seen in the corn-fields. Professor von Nordmann speaks of it as "extremely abundant in the northern portion of the Crimea from Perekop to the commencement of the range of mountains which run parallel to the south and south-east shores of the peninsula, but is absent from the southern portion, as also from the broken ground of Abasia, Mingrelia, and Ghouriel. When the winter is mild, a portion remain in the northern provinces of New Russia; but as soon as any heavy

snow falls they leave for Asia Minor, and do not return till March. These birds are sometimes so benumbed by a sudden white frost that they are killed by the natives with sticks—a fact which Pallas also records in his 'Zoographia.'" Mr. A. H. Kütz also, writing from the Crimea, states that "during severe winters it suffers greatly from hunger. They then go in flocks to the places inhabited by the Tartars, who kill and salt numbers for winter provisions. When it rains in the evening and freezes during the night they can be caught, as their wings are frozen, and they are unable to fly, besides which they cannot run on the slippery ice which covers every thing. When at Eupatoria I saw flocks flying so low over the town that they could be shot from the streets."

Ménétries says that it is met with in the winter season on the steppes at the foot of the Caucasus and near the Don. In Asia Minor it is usually not uncommon, though in the winter of 1871–72 Dr. Krüper recorded it as rare. Canon Tristram was told that it is sometimes brought into the market at Jaffa from the Plain of Sharon; and it is, he states, "still plentiful on the plains of Northern Syria. In North-eastern Africa it does not appear ever to have been met with;" and Loche says that "it only occurs accidentally during migration in Algeria, where formerly it was very common. A few appear about the end of February or the beginning of March, when the severe weather compels it to leave the parts of Europe which it generally inhabits;" and Mr. C. F. Tyrwhitt Drake states that it "is also found in Morocco, as one was shot a few years ago near Tangier; this I have on the authority of W. K. Green, British Vice-Consul at Tetuan, who himself shot and skinned the bird."

To the eastward the Bustard occurs as far as Dauria, where Messrs. Dybowski and Parvex met with it common on the steppes of the Onon, but rare at Darasun. Pallas gives the eastern limits of its range as the Lena and the territory of the Baikal; but, according to Radde, Mr. Maack saw it in the valley of the Uda, in Transbaikal, and again in large numbers on the Bureja steppe, but did not observe it to the eastward of that locality. Von Schrenck writes that the Bustards arrived in Dauria early in March with the Jackdaws. He observed them in the lower part of the Ilja valley; and in 1857 they were numerous in the Udinsk steppe, and further eastward were observed between Bjänkina and Nertschinsk Sawod, where they were found at an altitude of 3000 feet in mountainous but thinly wooded localities. He also observed them in the Selenga valley and in the Bargusin steppe. They migrate from the South Transbaikal country in August. Between the Tarei- and the Dalei-Nor, where the elevated steppes of Central Asia are, they are very rare, probably because it is not a grain-growing country. It has also on one occasion, as recorded by Mr. A. O. Hume (Ibis, 1871, p. 404), been met with in India, a specimen having been obtained at Murdan, west of the Indus, on the 23rd of December, 1870.

The Great Bustard frequents open, flat ground, preferring grassy plains or cultivated land, but avoiding localities near human habitations, and places where there are trees and bushes and where it cannot command an uninterrupted view over a large tract of country. It is peculiarly wary and shy; and it is almost impossible to approach it within gun-shot range. Hilly country, and especially mountains, it avoids altogether, and is never met with in the woodlands or forests. It especially frequents cultivated fields, and is often found in those where rape-seed, wheat, and rye have been sown. It passes the night in the open fields, choosing places where it cannot be approached without taking alarm, and is so watchful that it is impossible to

surprise it when asleep. It leaves its night-quarters at the first break of dawn, and during the hot summer days will often take a siesta during the hottest part of the day, but is then also equally wary and difficult of approach.

It flies with more ease than one would imagine, considering the size and weight of the bird, and has no difficulty in taking wing, at once springing up into the air without first taking a step or two, and appears to prefer seeking safety in flight rather than by making use of its legs. When it flies it stretches out its neck and legs, and is thus easily distinguishable.

It feeds chiefly on vegetable substances, grain, seeds, &c., but also eats various sorts of insects. Naumann states that "it eats not only buds and tender shoots, but also coarser portions of various wild plants, such as *Valeriana*, *Fedia olitoria*, *Leontodon Apargia*, *Crepis*, *Hyoseris*, *Hieracium*, tender shoots of the *Plantago*, young grass shoots, young corn and clover, cabbage, turnip, and rape-leaves, grain of various sorts, both green and ripe, and the ears and pods of various wild plants. Only the young birds feed exclusively on insects, the old ones eating them only in the spring and early summer. It is a great eater, and particular as to its food."

Early in the spring, according to the mildness of the season, they commence to prepare for the cares of nidification; and the flocks then by degrees break up. The males fight desperately for the possession of the females, and may at that season of the year be seen strutting about acting not unlike a Turkeycock. Mr. Wolf's excellent plate in Gould's 'Birds of Great Britain' gives a most faithful representation of the male during the pairing-season. After a short time they divide into pairs, excepting the young birds which are not capable of propagating their species, and who remain together in small companies during the time their elders are engaged with the cares of nidification. The eggs are deposited usually about the latter end of May, the nest being a mere depression scratched in the soil, usually in a grain-field, where the female is well concealed by the growing grain; sometimes the eggs are placed on the bare soil, whereas at others a few dried pieces of herbage or straws are placed as a lining to the nest. The female leaves and returns to her nest with great caution, walking stealthily and bent down to prevent being seen; and the nest is therefore by no means easy to find. The female alone incubates; and thirty days is the duration of incubation before the young are hatched. During the time she is sitting she seldom goes far from the nest, only leaving it to obtain food, which she does within as limited a range as possible.

When the young are hatched they are rather helpless than otherwise, but in the course of a few days are able to run with tolerable ease after their mother, who attends to them with the greatest care and solicitude; and if a stranger surprises her brood she will feign lameness, and use every device to entice him away, and thus permit the young birds to hide, which they do almost instinctively; and not until she considers they are out of danger will she seek safety in flight, soon, however, returning to seek her scattered brood again.

I have on several occasions eaten Bustard, but cannot say that I like it particularly; or perhaps it may not have been sufficiently well cooked. I have found the flavour by no means pleasant, and rather rank. Naumann remarks this also, and says that when alive it has a peculiarly strong smell, which is, to some extent, retained after death. This smell is something like that which pervades the Rook and the Raven; and many sporting dogs refuse to touch its

flesh, owing to this smell. On the other hand, many raptorial animals, as for instance those of the Weasel tribe, are particularly fond of it, and will follow the Bustard for some distance.

Mr. Sabanäeff informs me that the Russian peasants soak the flesh of the Bustard for some time in vinegar or "kvass" (the beer of the country) before cooking it, and that by so doing it is rendered tolerably palatable. This gentleman likewise confirms the statement I give above as to the Bustard being caught when a frost has followed rain and its wings are frozen.

The eggs of the Great Bustard are light brownish olive or dull olive-green, smudged and blotched with more or less distinctly defined dark brown blotches and irregular spots; in size, ten in my collection measure from $3\frac{1}{40}$ by $2\frac{3}{40}$ to $3\frac{1}{40}$ by $2\frac{7}{40}$ inches. The usual number deposited appears to be two, sometimes three.

Mr. Garrod, the Prosector of the Zoological Society, has kindly looked over the various articles on the gular pouch of the Bustard, and writes to me on the subject as follows:—"The different points connected with the question as to the existence or non-existence of a gular pouch in *Otis tarda* have excited a degree of attention and a diversity of opinion which can only be accounted for by the difficulty that there is in this country of obtaining a sufficient number of specimens for examination. Several authorities have recorded their very contradictory results; and Professor Newton's excellent and exhaustive summary (Ibis, 1862, p. 107) left the question as undecided as ever. Dr. W. H. Cullen, of Kustendjie, in Bulgaria, was led from Professor Newton's remarks to reexamine the point; and in the two specimens of the bird which he dissected, the pouch was well developed. He communicated his results, with drawings, to 'The Ibis' (1865, p. 143); and Professor Flower has also examined and described his specimens (P. Z. S. 1865, p. 747). Dr. Murie has further verified the existence of a gular pouch in an adult specimen which belonged to the Zoological Society of London; and a very good sketch of the open mouth accompanies his paper. The same author also proved the existence of a similarly situated, but smaller, pouch in *Otis kori*; and he shows that the habits of *Otis australis* render it certain that in that bird the same structure is also largely developed. Through the kindness of Lord Lilford I have had the opportunity of examining a specimen taken from a Spanish example of *Otis tarda*, in which the very capacious pouch is preserved with the tongue, trachea, and œsophagus. This specimen entirely agrees with those described by John Hunter and the other anatomists who have since found it.

"From the facts at present known regarding this subject it may be concluded that a large sublingual air-pouch, which runs down the anterior portion of the neck, is present in the adult of *Otis tarda* and some other species of Bustards during the breeding-season, that in young birds this pouch is not developed, and that during the non-breeding-time this pouch may, and perhaps always does, contract so considerably as to be become insignificant.

"If, as it seems probable to me, the pouch contracts and almost disappears in the intervals between the breeding-seasons, the discrepancies in the different accounts may be explained on the supposition that the birds examined were obtained at different times of the year. In a specimen now living in the Zoological Society's Gardens, which 'showed off' well during last summer and early this spring, no orifice can be felt at the present time (June 24th) with the finger, under the tongue, which could lead into any pouch, though the floor of the mouth is felt to be carried a considerable way further back than usual."

The specimens figured and described are in my collection, excepting the young in down, which was lent to me by Baron A. von Hügel.

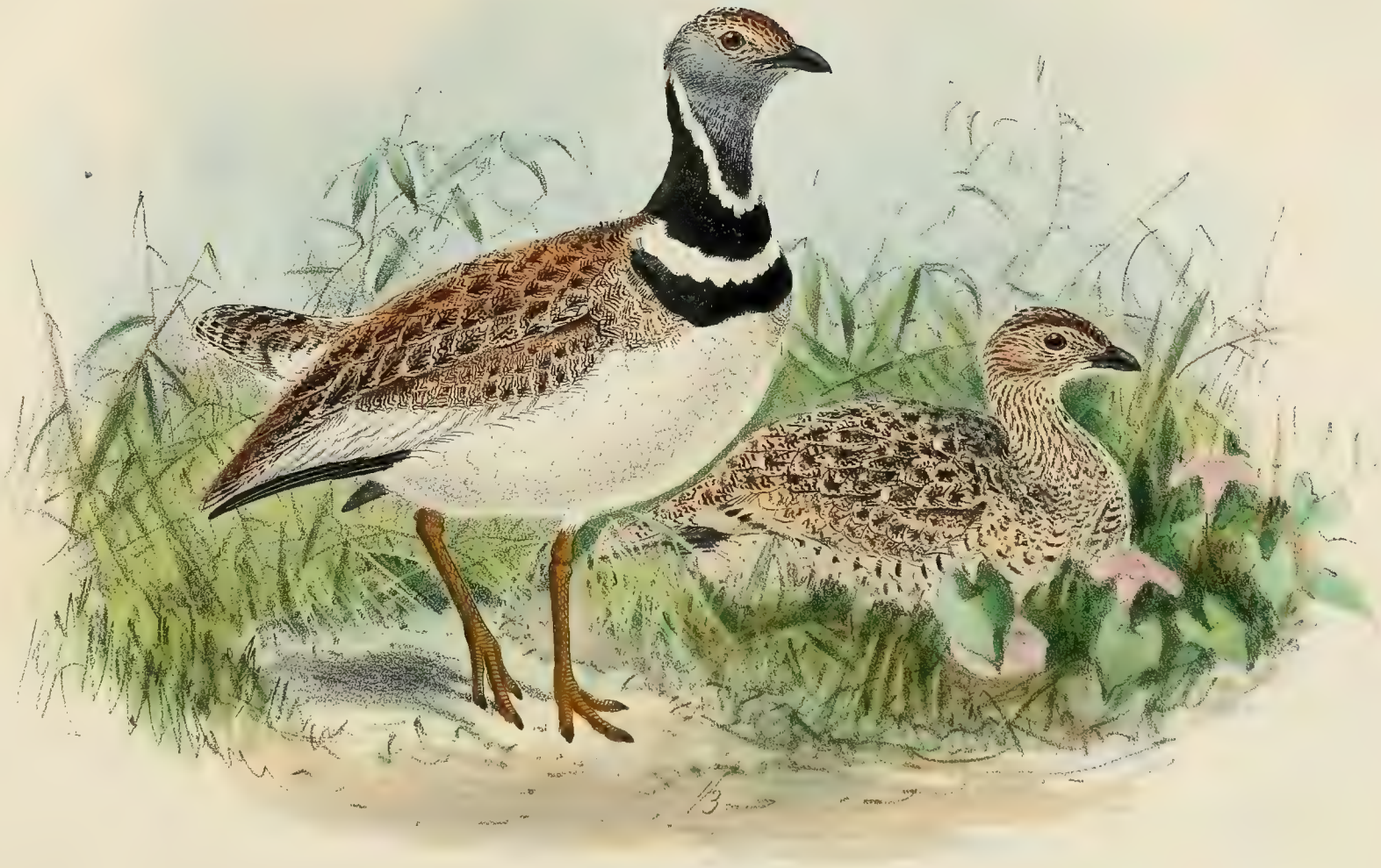
In the preparation of the above article I have examined the following specimens :—

*E Mus. H. E. Dresser.*

*a, b,* ♂ *ad.* Spain (*Lord Lilford*). *c,* ♀ *ad.* Smyrna, December (*G. von Gonzenbach*).

*E Mus. Baron A. von Hügel.*

*a,* ♂ *ad.* Southern Russian, spring of 1871; *b,* ♀ *ad.* Halle A. S., Prussia, May 1870 (*W. Schlüter*). *c, pullus.* Saratoff, S.E. Russia, 1871 (*Möschler*).



LITTLE BUSTARD.
OTIS TETRAX.
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# OTIS TETRAX.

(LITTLE BUSTARD.)

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*Otis tetrax*, Linn. Syst. Nat. i. p. 264 (1766).
*Tetrax campestris*, Leach, Syst. Cat. Mamm. &c. Brit. Mus. p. 28 (1816).
*Otis tetrao*, Macgill. Man. Brit. B. ii. p. 40 (1846).
*Otis minor*, Brehm, Naum. 1855, p. 288.

*Outarde canepétière*, *Poule de Carthage*, French; *Zwergtrappe*, *kleine Trappe*, German; *Avutarda pequeña*, *Sison*, Spanish; *Cizão*, Portuguese; *Gallina pratajola*, Italian; *Pitarra*, Sicilian and Maltese; *Boozerat*, Moorish; *Rha' ahd*, Arabic.

*Figuræ notabiles.*

Buff. Pl. Enl. pl. 25. fig. 10; Naum. Vög. Deutschl. taf. 169; Gould, B. of Eur. iv. pl. 269; Yarr. Brit. B. ii. p. 371; Schl. Vog. Nederl. pl. 205; Gould, B. Gt. Br. pt. v.; Morris, Brit. Game-birds, p. 101; Sundev. Sv. Fogl. pl. lxxxv. fig. 1; Fritsch, Vög. Eur. tab. 36. figs. 1, 2.

♂ *ad.* pileo summo nuchâque fulvescentibus ubique nigro variegatis, loris et regione oculari concoloribus sed minùs distinctè notatis: gulâ cum genis et regione paroticâ cinereis: gutture imo triquetrè nigro ponè regionem paroticam ducto et ubique torque collari lato albo collum circumeunte marginato: jugulo et collo reliquo undique nigerrimis: torque pectorali lato albo, altero inferiore angustiore nigro: dorso toto arenaceo, ubique minutè nigro transvermiculato, interdum maculas nigras formante: tectricibus alarum dorso concoloribus sed minutiùs vermiculatis, margine carpali et tectricibus medianis exterioribus et majoribus omnibus albis: alâ spuriâ brunneâ, albo terminatâ: remigibus saturatè brunneis, primariis interioribus fasciâ nigrâ subterminali notatis, minimis omninò albis, secundariis dorso concoloribus sed magis conspicuè nigro undulatis: uropygio imo et supracaudalibus albis, his immaculatis: caudâ fulvescente, conspicuè nigro undulatâ, rectricibus centralibus fasciis tribus nigris transnotatis, rectricibus exterioribus magis conspicuè cinerascente vermiculatis, fasciâ subterminali irregulari transnotatis et albo latè terminatis: corpore reliquo subtùs albo, pectore superiore laterali dorso concolori: rostro corneo, versùs apicem nigricante, mandibulâ ad basin flavicante: pedibus ochrascentibus: iride rufescenti-brunneâ.

♀ mari dissimilis: picturâ maris capitali et collari absente: omninò fulvescens, pulchrè nigro et arenaceo transvermiculata et variegata: pectore et abdomine albis, hypochondriis fasciis sagittiformibus notatis, gulâ albicante: jugulo et pectore superiore dorso concoloribus.

*Adult Male in spring.* Back and scapulars sandy brown, every feather being barred with wavy black lines, some having a black spot in the centre; upper tail-coverts lighter, the outside feathers being pure white marked with black; primary quills white at the base, the rest of the feathers being dull black, the inner ones white, broadly banded with black and tipped with white; secondaries white, the innermost elongated in shape, and in colour similar to the back; primary wing-coverts white, with a black central mark; the larger coverts white, marked with dark lines at the base; the smaller coverts similar

to the back; top of the head sandy brown, marked with black; sides of head and throat plumbeous grey edged with black, this colour extending in a V-shape down almost to the centre of the neck, below this a narrow white collar extending round the neck; the lower part of the neck all round and fore part of the breast rich glossy black, banded below by another white collar, the feathers at the back of the neck being considerably elongated; underparts pure white; tail with the central feathers similar to the back, the outer ones lacking the sandy tinge, and the outermost pure white barred with black; across the tail are four distinct black bars; under wing- and tail-coverts white; bill horn-coloured, black at the tip, and marked with dirty yellow at the base of the under mandible; legs ochreous-yellow; iris reddish brown. Total length 16 inches, culmen 0·70, wing 9·50, tail 4·50, tarsus 2·20.

*Adult Female in May.* Back and upper parts much lighter than in the male, the markings being larger, and the back having the appearance of being spotted with sandy brown: crown black, marked with sandy brown, the centre of each feather being of this colour; sides of the head and neck pale sandy brown, striped with black; chin dirty white; underparts white, the breast tinged with ochre, and marked with black; flanks marked with black spots.

*Obs.* A male obtained on the Lower Ural river on the 20th of April differs from the Spanish specimen above described in being much darker on the back, and having the cross bars much more delicate, the black border to the plumbeous grey on the throat being also much broader.

*Adult Male in autumn.* Is said by Loche to differ in lacking the white collar, and in having the long black feathers on the back of the neck replaced by dull dark grey.

*Young Male.* Closely resembles the female, but has the back marked with the same fine striations as the adult male.

*Obs.* We notice that a male bird from Tangiers differs from all our other European specimens in having a decidedly more compressed bill and shorter tarsus, while the markings on the back are coarser than in ordinary examples.

Though common in Southern Europe, the Little Bustard is only an occasional visitant to the central and northern portions of the continent, but it has occurred as far north as Sweden. In the British Isles, according to Mr. Harting, as many as forty occurrences are on record. Yarrell gives many instances of its capture, and mentions that it has been procured twice or three times in Cornwall, four times in Devonshire, once in Hants, once in Oxfordshire, once in Kent, three times in Yorkshire, several times in Norfolk, Suffolk, and Cambridgeshire, once near Birmingham, once near Scarborough, and twice in Northumberland, all these occurrences having taken place during the winter. In Scotland, according to Mr. R. Gray, it has been obtained once near Montrose, in December 1833, once near St. Andrew's, on the 6th of March, 1840, once in Morayshire, on the 8th of February, 1861; and a second bird was observed when the last-named specimen was shot, but it was not procured. In Ireland two were recorded by Mr. Thompson as having been seen in County Wicklow on the 23rd of August, 1833, one of which was shot. It has been stated to have occurred in summer plumage; but, respecting this, our friend Mr. J. H. Gurney, jun., writes to us as follows:—"The Little Bustard occurs in turnip-fields always in winter plumage, and oftener in December than in any other month. I do not for a moment believe that the specimen in summer plumage in the British Museum, mentioned by Stevenson

and Gould, was really killed in Norfolk, as set forth in Gray's list (part iii.), or that it can be the one alluded to in the 'Zoologist,' p. 2242."

In Scandinavia it has been met with on several occasions; and Nilsson states that it occasionally occurs in Sweden, both in the south and also in the northern parts of the peninsula. Linnæus included it in his 'Fauna Suecica,' without stating where it had been obtained. A specimen is in Stockholm labelled as having been procured in Upland, on the farm of Wasa, in May 1804; and one was obtained alive at Ekeröd, in Skåne, in the autumn of 1803, and kept in captivity for some time by Lieut.-Col. Rosenkrantz. According to Mr. Mesch a young male was killed in the autumn on Ramsele Fell, in Ångermanland. It has not occurred in Finland; but regarding its range in Central Russia Mr. Sabanäeff writes that, according to Prince W. W. Wiazemski, the Little Bustard was killed about twenty years ago in the Skopinsk district, Government of Riazan. Daniloff states that it occurs in the Government of Orloff during migration. Severtzoff met with it breeding in the Government of Voronege; and Bogdanoff saw it in the Bouin district, Government of Kazan.

Mr. Taczanowski kindly informs us that "this bird occurs but accidentally and rarely in Poland in autumn or at the beginning of the winter: isolated individuals usually appear; and I only know of one instance when a flock of several individuals was observed, near Lowicz, in 1870; and three out of this flock were killed. In the Museum at Warsaw there is a young male which I killed near that city, and a female killed in the Government of Lublin." Mr. Nicholas Arcibascheff, in his notes on an ornithological journey to the banks of the Sarpa in 1858 (Bull. Soc. Imp. de Moscou, 1859, no. 3, p. 70), says "during the breeding-season the male has in the throat a pouch, differing, however, somewhat from that of the Great Bustard; it is, moreover, closer to the head, and is a body that forms a sort of pad. During the pairing-season the male chooses a small hillock where he comes daily and, jumping about, utters a harsh cry like *trec trec*, which, though not loud, may be heard some distance. The Russian peasants know this habit of the bird, and easily ascertaining which hillock the bird frequents, place snares on it, into which the bird rushes, and seldom escapes being caught." The naturalists who have observed the habits of this bird in different parts of Russia do not agree as to the number of eggs it lays. Mr. Arcibascheff says that it lays from two to four in the month of April; whereas Mr. Aksakoff, in his hunter's notes in the Government of Orenburg, 1868, states that he has found nine eggs. According to this latter author, the female makes her nest in an open situation on the steppe, generally at the foot of a bunch of grass; the nest is flat, composed of dry grass intermixed with feathers of the bird itself. He further says that the female sits so close that on one occasion when pursuing a wounded bird he trod on and killed another female Little Bustard sitting on nine eggs. Skinder, who procured the eggs for the late Mr. Tyzenhauz in Bessarabia and the Crimea, states positively that this bird lays from eight to twelve eggs. Aksakoff writes that in the Orenburg steppes these birds collect in large flocks of as many as fifty pairs in the autumn, and frequent by choice the cultivated fields and places where the steppe has been mown over. In the Ukraine, where formerly it was very common, it is by degress becoming rare.

According to Borggreve, during the last ten years there have been occurrences recorded from the far south-west to the extreme north-eastern parts of Germany. He himself procured an

example on the mountains on the left bank of the Rhine, at an altitude of 2000 feet above the sea-level. Mr. Benzon, of Copenhagen, writes that "the Little Bustard occasionally straggles to Denmark, usually to the now detached Duchies; and I know of only four instances of its occurrence within the limits of the present Kingdom of Denmark. Two of these were procured in Jutland, one about 1819 at Kolding, and one at Ringkjœbing on the 25th of November, 1863. The other two were from the islands, one obtained on Mœen in January 1850, and the other on the 20th of December, 1863, on the little island of Amager, near Copenhagen, which last is in my collection: the first two are in the University Museum. All four were females." In Belgium it occurs but very rarely, and has been recorded by Baron De Selys-Longchamps as having been procured on the plains of Campine and in Brabant. It is likewise rare in France, and according to Degland and Gerbe only occurs irregularly in the southern provinces. It breeds, however, in France on the plains of Montreuil, Bellay, Doué, and Champagne, near Troyes, in La Vendée near Niort. It arrives in these localities singly or in small flocks late in March or early in April, and leaves again about the end of September. Often there are in the same canton several colonies, which remain apart during the breeding-season and until the young are grown. On their arrival the sexes meet, and the males fight for the possession of the females.

The Rev. A. C. Smith found this Bustard extremely common in Portugal; and Lord Lilford and Mr. Howard Saunders also record it as numerous in Spain. Dresser often saw them exposed for sale in the market in Madrid; and Major Irby writes that it "is found at Casa Vieja, near Gibraltar, in great numbers; in October they are met with in flocks of as many as three or four hundred; later on they break up into smaller lots; but as long as the low level ground or vega remains dry they remain there; in the spring they disperse all over the open country to breed, some coming close to Gibraltar. They are very wild,—except in the breeding-season; and in August, when between eleven and four o'clock the sun is very hot, they lie 'like stones.'"

In Switzerland, Dr. Girtanner informs us, it is but rarely observed, and only during migration, though fifty years ago it is said to have been common even near the towns; and in Savoy it occurs accidentally in the autumn, and but rarely in the spring. Doderlein remarks that this species is resident and abundant throughout the greater part of Sicily, a partial migration to Africa taking place during some winters; and Mr. C. A. Wright records it as rare on Malta, though rather less so than the Great Bustard. Giglioli states that nearly every year some are captured near Pisa, though he himself did not meet with it. Lindermayer says that it is tolerably common in the northern parts of Greece, but rarer in the Peloponnesus, and is never seen on the islands. He observed it regularly from November to the end of March. A few are said to breed in Greece. Lord Lilford met with it on Corfu in December 1856, and in Epirus in March and January.

With regard to its range in Southern Germany, Count von Tschusi Schmidthofen writes to us that he saw a female in March 1867, in a game-dealer's shop at Vienna, which he stated was obtained near that town. He further writes that in the Tyrol it rarely appears, and only occurs in the winter season. Kablik obtained one near Prague in 1838; and Fritsch purchased a young male in the market at Prague in 1850. An old pair was shot near Weisswasser, according to Fritsch; and it occurred in 1853 near the village of Cas, near Pardubic, and in the autumn of 1860 near Borkowic, as also once (a female), in the winter, at Winterberg. In Hungary it is

occasionally met with; and, in short, writes our friend above referred to, it is a rare bird everywhere in the Austrian dominions, though to be met with singly in almost every portion.

Dresser found it in almost all suitable localities on the lower Danube; and we give below some excellent notes respecting this species in the Dobrudscha, from the pen of Mr. W. H. Hudleston. Messrs. Elwes and Buckley, who visited the Dobrudscha ten years later than Mr. Hudleston, still found it numerous, though rapidly decreasing under the influence of cultivation. In April their numbers are largely increased by flocks arriving from the south; but, unless driven away by the snow, a few always remain to winter in the district. On the plains of Southern Russia it is common, and especially so between the Pruth and the Caspian; Ménétriés likewise found it numerous in the Caucasus. Messrs. Dickson and Ross met with it commonly near Erzeroum, frequenting ploughed fields and on the skirts of the marsh. It arrives there early in September, and leaves about the middle of November. We have before us specimens obtained in the neighbourhood of Smyrna; and Canon Tristram writes that it is known to be a vernal visitant to the maritime plains of Palestine, though he himself, not being there in the proper season, did not meet with it. According to Von Heuglin it is found singly in the north-eastern portion of Lower Egypt. Canon Tristram and Major Loche met with it in Algeria; and the former writes that it is "found only in the plains on the north of the Sahara, and seldom beyond the limits of barley cultivation. On its migration it occurs in the southern oases for a few days together." Loche speaks of it as common in Algeria. He found it on the plain of Chélif, and less frequently on the plain of Mitidja, in the early part of June. Mr. Tyrwhitt Drake met with it commonly in Tangier; and Major Irby informs us that it is equally numerous in Marocco, where they are generally seen on the level ground in spring, breeding there abundantly.

To the eastward the range of the Lesser Bustard extends into India, where it has been recorded by Jerdon and Blyth as occurring in the Peshawur valley; and the latter states that it is known to be common in Mesopotamia. Mr. O. Hume writes to us as follows:—"This pretty little Bustard, known to Punjaubee sportsmen as the Butterfly Houbara, is not uncommon in suitable localities during the cold season in that small strip of Indian territory that lies west of the Indus as far south as Dera Ghazee Khau. Northwards I have it from Abstabad and Huzara. It breeds in May, as I learnt this year, in the Belooch plains; and I hope before long to have its eggs."

The Little Bustard is strictly an inhabitant of the plains, and is only found where there are large level tracts of country. In Algeria, according to Loche, it approaches the coast during the breeding-season, and returns to the extensive southern plains in the commencement of the autumn. As soon as they arrive at their breeding-station the sexes join, and the males fight for the possession of the females; the conqueror struts round the female, his wings half open, tail depressed and spread, head drawn back, and his whole body trembling. The females only remain with the males until it is necessary to prepare their nests, which they do alone, and attend, unassisted, to the incubation of the eggs and the bringing up of their young. When the latter are hatched they are attended to with the greatest care by the mother. The nest is placed on the ground, and is scarcely more than a slight depression in the soil; and the number of eggs deposited is usually from three to four.

Usually this bird is difficult to approach, except during the heat of the day, when it lies extended on the ground in the glare of the sun, its long legs stretched out; and it lies until one is close upon it, when it usually seeks safety by running off swiftly; and being so close in colour to the soil it is not easily observed at any distance.

It feeds on insects, worms, plants, and seeds, and, being a voracious bird, it renders great service in destroying grasshoppers and locusts; it also eats snails, slugs, and even small reptiles.

With regard to the habits of this Bustard in the Dobrudscha, we cannot do better than give the following excellent notes by Mr. Hudleston:—"The westward slope of the height of land in the neighbourhood of Trajan's wall is also favourite ground for Bustards, especially for the Little Bustards. The latter arrive from the south rather before the middle of April, in flocks of considerable size, many staying to breed here, whilst others are moving further north. The male birds are particularly demonstrative at this time of the year; and being often occupied in parading their attractions in groups of ten or a dozen to the females, which are crouching somewhere in the grass, they are not so wide awake as at other seasons, and thus afford a better chance to the gun. On foot, even with a rifle, it is not easy to reach them; but with an araba, judiciously managed, very fair sport may be had. After a few months' experience of the stony mountains and dense coverts of Greece, nothing can be more exhilarating than a gallop in an araba over the breezy downs of the Dobrudscha in early spring. It is true that at starting you expect concussion of the brain must necessarily ensue, as there are no roads, and your driver dashes over all minor inequalities of the surface; but this feeling soon goes away, and you get on famously until a wheel comes off, or until you make the unpleasant discovery that your powder-flask has been rattled out of the cart, in which latter case you face about and retrace your track till it is found. In these expeditions I and my friend R. B. used to take it in turns to drive and shoot. But supposing all these little mischances are overcome and Bustard-ground fairly reached, a wild yet pleasing scene it is, on a sunny spring morning, such as those which we had the good fortune to enjoy. On all sides an undulating prairie, solitary in the extreme, yet not destitute of bird life. The traveller on his way back from the south will here see the well-known Sky-Lark (*Alauda arvensis*) breeding plentifully in the midst of *A. cristata* and *A. brachydactyla*. The Grey Partridge keeps pretty close; but occasionally one will get up, in spite of the numerous Harriers that contribute further to enliven the landscape, which, also, is seldom free from the presence of one of the grass-breeding Eagles (*Aquila nævia*). Occasionally Vultures may be seen soaring aloft. Both *Gyps fulvus* and *Vultur monachus* have been noticed: once I shot at an individual of the latter species with a pistol. Now and then passes a troop of Ducks or Wild Geese, a flock of Waders, or perhaps a few stray Terns or Gulls, on their way to the marshes. Often, too, the Ruddy Shelduck may be seen, watching its opportunity for popping unnoticed into its hole in a mound or tumulus. Presently some Bustards are descried on the opposite slopes, and away we gallop towards them. It may so happen that they take the alarm and fly before we are within a quarter of a mile. The Great Bustard almost invariably does; but the Little Bustard, besides being more plentiful, is less wary, and often takes no notice of the araba. Arrived within 200 yards, we commence 'great-circle sailing,' gradually shortening the distance, though, to the flock, we seem ever going away from them. The pace is now a good trot, and the great thing is to pull up dead when about forty yards off, firing the instant the birds

rise, which they are pretty sure to do as soon as the machine stops. We found by experience that forty yards was about as close 'shaving' as the birds would stand; and at that distance it was not always a kill, especially if the horses were not perfectly quiet. If a bird was hit, but not brought down, we galloped after him at full speed, when, finding he could not get away from us, he would often crouch; and under these circumstances it was very difficult to find him. We used to get down from the araba and almost walk over them before they would get up. They are slow risers generally, but, when once fairly on the wing, go at a slashing pace. On getting up, the Little Bustard makes an odd rattling noise, very similar to that produced by a bird-scarer such as is used in gardens. In this description of sport only one person can shoot at a time; but, in fact, there is as much fun to be had, and more skill to be displayed, in managing the horses so as to place the araba in a favourable position, than in shooting the game. Our best bag in one day was seven brace, of which number eleven birds were males in splendid plumage. The flesh is dark, and at this season rather strong; but in a hungry country like the Dobrudscha one is not apt to be particular."

In Dresser's collection are a dozen eggs of this species, procured in Spain, which we now have before us. In size these eggs vary from $1\frac{36}{40}$ by $1\frac{18}{40}$ to $2\frac{4}{40}$ by $1\frac{22}{40}$ inch, and in colour vary from light greenish-olive, marked with indistinct brown blotches, to a uniform rich dark olive brown colour, without any markings. The shell of these eggs is very glossy and fine-grained.

The specimens figured and described are in Dresser's collection, obtained by Lord Lilford near Aranjuez, in May 1865.

In the preparation of the above article we have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Aranjuez, Spain, May 1865 (*Lord Lilford*). *c*, ♂. Ural river, 20th April, 1861 (*Dode*). *d*, ♂. Tangiers (*Irby*). *e*, ♀. Near Smyrna, 20th December, 1865. *f*, ♂. Near Smyrna, February 1863. *g*, ♀. Caspian (*Dode*).

*E Mus. H. B. Tristram.*

*a*. Djendeli, 18th May, 1857 (*H. B. T.*). *b*, *c*. ——.

*E Mus. A. B. Brooke.*

*a*, ♀. Cidro, Sardinia, 28th March, 1871 (*A. B. B.*).

*E Mus. J. H. Gurney, jun.*

*a*, ♀. Paris Market, November 1868 (*J. Gatcombe*).



HOUBARA BUSTARD.

OTIS UNDULATA

# OTIS UNDULATA.

(HOUBARA BUSTARD.)

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*Le Houbara ou petite Outarde huppée d'Afrique*, Buff. Hist. Nat. Ois. ii. p. 59 (1771).
*Psophia undulata*, Jacq. Beitr. Gesch. Vög. p. 24, pl. 9 (1784).
*Otis hobara*, Desf. Mém. de l'Acad. Roy. des Sc. p. 496, pl. x. (1787).
*Otis houbara*, Gmel. Syst. Nat. i. p. 725 (1788).
*Atix houbara* (Desf.), Werner, Atlas, Coureurs, pl. 4.
*Houbara*, Bp. Sagg. distrib. metod. Animal. Verteb. ed. 2, Agg. e correz. p. 142 (1832).
*Chlamydotis*, Less. (*Otis houbara*, Gm.), Rev. Zool. 1839, p. 47.
*Chlamydotis houbara* (Desf.), G. R. Gray, List of Gen. of B. p. 64 (1840).
*Houbara undulata* (Jacq.), G. R. Gray, List of Gen. of B. p. 83 (1841).
*Eupodotis undulata* (Jacq.), G. R. Gray, Gen. of B. iii. p. 533 (1845).
*Otis ornata*, C. L. Brehm, Vogelfang, p. 278 (1855).

*Figuræ notabiles.*

Jacq. *l. c.*; Desf. *l. c.*; Werner, *l. c.*; Gould, B. of Eur. pl. 268; Vieill. Gal. des Ois. pl. 227; ? Sund. Sv. Fogl. taf. 75. fig. 3.

♂ *ad.* pileo rufescenti-ochraceo, nigro delicatè notato et fasciato: cristâ verticali albâ, plumis posticis rufescenti-ochraceis nigro notatis: mento albo: faciei lateribus cum collo toto griseo-albis nigricante vermiculatis et ochraceo-fusco tinctis: torque collari suprà nigro, infrà albo: corpore suprà rufescenti-ochraceo, nigro fasciato et notato: tectricibus alarum pallidioribus: remigibus primariis ad basin albis et nigro terminatis, extimo in pogonio externo fere omnino nigro: caudâ rufescenti-ochraceâ, cæruleo-cinereo fasciatâ et albo terminatâ, his fasciis in parte apicali nigro notatis: pectore et corpore reliquo subtùs albis: rostro griseo-brunneo, ad basin flavicante et versus apicem saturatiore: iride flavidâ: pedibus olivaceo-flavidis.

♀ *ad.* mari similis sed minor, cristâ minore, et torque collari minus extenso.

*Adult Male* (Alexandria, 2nd December). Crown rufescent ochreous, marked and barred with black, centre of the crown covered with a thick crest of long white feathers, some of which are tipped like the rest of the crown; chin white; sides of the neck and head below the auriculars, fore part of the neck, and hind neck white, vermiculated with greyish black, and slightly tinged with pale ochreous brown; on each side of the lower neck are elongated black feathers, to which on the lower part are joined similarly elongated white feathers forming a conspicuous ruff, the feathers on the lower neck being also somewhat elongated; entire upper parts rufescent ochreous, rather boldly barred with black, the bars being collected together and forming irregular bands across the back; wing-coverts paler than the back; primaries white at the base, and black on the terminal portion, the first quill with the outer web black nearly to the base; tail rufescent ochreous, crossed by five conspicuous dove-blue bars, marked with black on the terminal bars, and finally tipped with white; breast and rest of the underparts white; bill greyish brown, darker at the point, and yellowish towards the base; iris pale greenish yellow; legs

yellowish grey with a dull greenish tinge. Total length about 26 inches, culmen 1·8, wing 14·3, tail 8·5, tarsus 3·6.

*Adult Female* (Laghouat). Resembles the male, but is smaller, the crest is much less developed, and the ruff does not extend so far up the neck. Total length about 23 inches, culmen 1·75, wing 13·7, tail 8·3, tarsus 3·5.

By many authors the present species and McQueen's Bustard have been treated as specifically identical; and there is consequently some little difficulty in correctly defining its range; but, so far as I can ascertain, it inhabits the Mediterranean subregion, ranging eastward as far as Armenia, to the eastward of which it is replaced by *Otis macqueeni*.

It is somewhat remarkable that the various examples of Ruffed Bustards which have been obtained in Northern and Central Europe as rare stragglers should in almost every instance have proved to be the eastern species, and not the true African Houbara, which latter, so far as I can ascertain, has not been satisfactorily shown to have occurred further north than the vicinity of the Mediterranean. Dr. Companyo says that a single specimen, too much damaged for preservation, was brought to the market of Perpignan many years ago; Messrs. Degland and Gerbe state that it occurs in Portugal, but give no authority; and Professor Barboza du Bocage, who includes it in his list of the birds of that country with a note of interrogation, says that it may possibly occur there as a rare straggler. Mr. Howard Saunders, however, informs me that he has examined two specimens obtained in Spain—one near Malaga, and the other near Seville, but that it can only be looked on as a rare visitant. It has also been met with in Italy; for Count Salvadori states that two females were obtained not far from Rome, at the end of November and on the 16th December, 1859, during the prevalence of strong southerly winds—one of these specimens being in the Museum of the University of Rome, and the other in the collection of the Marquis Massimiliano Lezzani. There is also a specimen in the Museum of Syracuse, which is supposed to have been obtained in the island of Sicily; and Mr. C. A. Wright, who records it as quite an accidental visitant to Malta, says that about thirty years ago a male specimen was obtained there during a storm. According to Dr. Krüper it is only a rare and accidental straggler in Greece; and though Degland and Gerbe state that it occurs in Turkey, I do not find any specific instance on record of its capture there. Professor von Nordmann, however, states that during the five years he collected in Southern Russia it was once obtained on the steppes of the Don; but it is possible that the specimen in question may have been McQueen's Bustard. It is stated to occur in Asia Minor; and Canon Tristram, who met with it in Palestine, states (Ibis, 1868, p. 321) that it is very common in the Jordan valley, where he saw it day after day in small flocks, but never succeeded in getting within shot, except when without a gun. I have not been able to examine a specimen from Asia Minor or Palestine; but there appears to be no doubt that the species found there is the true Houbara; for De Filippi says that two examples obtained by him at Djulfa, in Armenia, were certainly not *Otis macqueeni*, but *Otis undulata*.

It is met with in North-east Africa, and, according to Captain Shelley, is plentiful in most parts of Northern Africa, frequenting the desert, and ranges, he believes, throughout Egypt and Nubia. Mr. J. H. Gurney, jun., informs me that it occurs at the Fayoom, and that the overseer

of the sugar-factory there told him that the Arabs not unfrequently brought in specimens, and that he had kept one alive for three months. Von Heuglin says that it is rare on the Nile; Antinori says that he has on several occasions received it from the Arabs of East Senaar with other allied species; and Rüppell states that it is rare in North-east Africa. In the spring of 1850 Von Heuglin met with what he believes to have been this species at the foot of the Atagah mountains; and in the summer of 1860 a fully fledged young male was killed near Cairo. In this specimen the crest and collar were fully developed, though the wing- and tail-feathers had not attained their full length. "In the grassy and bush-covered plains on the Mediterranean coast west of Alexandria, however," Von Heuglin writes, "this bird is commoner, and is seen in pairs and families, wandering about; and it is very shy. Only during the pairing-season and in the late summer will it allow itself to be approached within gunshot-range, as it will then squat when danger threatens; and the Arabs say that the males when they fight amongst themselves in the spring are not difficult of approach." Loche says, "the Houbara inhabits the southern portions of Algeria and the Sahara as far as Dar-four. It frequents the vast desert plains where there is no trace of cultivation, and never collects in flocks, being usually seen singly or in pairs. Like most of the Bustards it feeds on insects, caterpillars, vegetable matter, and small reptiles." Colonel Irby says that the present species is not mentioned by Favier as occurring at Tangier, but he saw one specimen which had been obtained near there in August, and it is stated to be frequently met with further south. It is also an inhabitant of the Canaries, but is stated by Berthelot and Dr. Carl Bolle to be found only on Fuerteventura, except that a few have been obtained on the south coast of Lanzarote.

Shy and extremely difficult of approach, the Houbara frequents the large sandy plains where it can with ease note the approach of an intruder. Loche says that it is always found singly or in pairs; but other observers state that it is often met with in small flocks. Dr. Carl Bolle, writing respecting its habits in the Canaries, says:—"It is fond of the large plains, especially in localities where corn-fields are near; but I have seen it far in the desert and even on stony mountains. It is but seldom seen, as it squats down to escape observation when approached, and will hide behind a stone, seldom seeking safety in flight at once. It is generally seen in pairs, and is extremely shy and wary, so that it is difficult to approach within shot-range; and I am told that it may most easily be approached if the gunner be seated on a donkey or camel; for the birds are accustomed to see these animals and are not afraid of them; but they must be approached in circles, and not direct. The flesh of this bird is eagerly eaten. In spite of its shyness the Houbara Bustard is easily tamed if caught young; and I have seen a tame hen bird consorting with the poultry in the yard of Dr. Thomas Mena." According to Von Heuglin the present species feeds on desert-beetles, orthoptera, snails, grubs, seeds, and tender shoots; and it is also said to eat frogs and lizards.

The nest of the Houbara is a mere depression scratched in the soil, without any lining; and, according to Loche, the number of eggs deposited is only four or five. I am indebted to Mr. J. H. Gurney, jun., for one egg obtained by him in Algeria, and possess another from Loche. These eggs are olivaceous brown, tolerably regularly marked with somewhat blurred broad dashes of darker brown, and here and there spotted with clear blackish brown. In size they measure $2\frac{15}{40}$ by $1\frac{31}{40}$ inch, and are pointed somewhat towards each end.

In North Africa the present species is highly esteemed for falconry purposes; and Loche gives some interesting details respecting this sport, which I translate as follows:—"In the spring, when the Houbara is very fat, the Arab chiefs, who are passionately fond of falconry, pursue it with Falcons; and for a European it is a curious sight to watch these superb individuals, each of whom carries on his fist a richly hooded Falcon, which seems impatient to exhibit its courage and skill. The plain is beaten for Houbaras, which display great ingenuity in their efforts to escape from their enemies, dodging here and there, plunging into the bushes again and again. When one is forced to take wing the Falcons are unhooded, and these latter start in pursuit as swift as an arrow, and strike the Bustard down. Sometimes when it finds that it will be struck by the Falcon, the Bustard throws itself on its back and strikes its enemy viciously with its feet. In a chase at which we were present a superb Falcon, belonging to a chief of the Ouled Naïls, which had struck at a Houbara, passed for a moment below its quarry, and this latter at once discharged its excrement over it. To my great surprise I heard the owner of the Falcon at once cry out in a tone of despair, 'My poor Falcon is dishonoured, and will die; the Houbara has poisoned her!' We at first laughed at this allegation, which seemed to us ridiculous; but, to our astonishment, the poor Falcon, which shortly before was in full health and vigour, expired in a very short space of time. I can give no explanation of this, and merely describe what passed in my presence."

The specimen figured is an adult male, from Alexandria, in the collection of Mr. Howard Saunders.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Laghouat, Algeria, March 30th (*J. H. Gurney, jun.*).

*E Mus. Howard Saunders.*

*a*, ♂ *ad.* Alexandria, December 2nd, 1864 (*Stafford Allen*). *b*, ♀. Ain Ousera, Algeria, March 19th, 1870 (*J. H. Gurney, jun.*).

*E Mus. H. B. Tristram.*

*a*, ♂. Ain Boudijah, Sahara, June 3rd, 1856 (*H. B. T.*). *b*, ♀. Laghouat, March 29th, 1870 (*J. H. Gurney, jun.*).



J.G.Keulemans, del.

M.& N.Hanhart imp

MACQUEEN'S BUSTARD.

OTIS MACQUEENI.

# OTIS MACQUEENI.

(MACQUEEN'S BUSTARD.)

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?*Otis marmorata*, J. E. Gray, Ill. Ind. Zool. i. pl. 60 (1832).
*Otis houbara*, Naumann, Vög. Deutschl. vii. p. 66, et auctt. plur. (1834, nec Desf.).
*Otis macqueeni*, J. E. Grey, Ill. Ind. Zool. ii. pl. 47 (1835).
*Houbara macqueeni*, G. R. Gray, List of B. Brit. Mus. iii. p. 57 (1844).
*Eupodotis macqueeni*, G. R. Gray, Gen. of B. iii. p. 533 (1845).
*Eupodotis undulata*, G. R. Gray, Cat. Brit. B. p. 134 (1863, nec Jacq.).

*Figuræ notabiles.*

Hardw. Ill. Ind. Zool. pl. 47; Naumann, Vög. Deutschl. pl. 170; Dubois, Journ. f. Orn. 1866, pl. iii.; Bechst. Orn. Taschenb. pl. 19; Gould, B. of Asia, iii. pl. 8.

♂ *ad. O. undulatæ* similis, sed pilei cristâ albâ nigro terminatâ, dorso rufescenti-ochraceo nigro vermiculato: caudâ fasciis tribus cæruleis transfasciatâ et ad basin pallidè rufescenti-ochraceâ immaculatâ: corpore subtùs sicut in *O. undulatâ* colorato, sed plumis elongatis in gutture imo cæruleo-cinereis nec albis.

♀ *ad.* mari similis sed sordidior et minor, cristâ et torque collari minoribus.

*Adult Male* (Sindh). In general character of plumage resembling *Otis undulata*, but differing as follows: the crest is scarcely as full, and most of the feathers are black on the terminal portion; the back is quite differently marked from what it is in *Otis undulata*, being finely vermiculated with black on a rufescent ochreous ground, the markings here and there collecting so as to form irregular blotches; tail marked with only three blue bars, the basal portion being pale ochreous rufescent; underparts as in *Otis undulata*; but the elongated feathers on the lower throat are blue-grey, and not white; soft parts as in *O. undulata*. Total length about 26 inches, culmen 1·7, wing 15·4, tail 8·6, tarsus 3·9.

*Adult Female* (N.W. India). Differs in being rather smaller in size, and in having the crest and ruff less developed.

The present species, the eastern representative of the African Houbara Bustard, inhabits the north-western portion of India, occurring westward into Persia. It occasionally straggles into Europe, and has occurred as far west as Great Britain, where, however, it has only been met with on one occasion. Yarrell states that the specimen in question was shot by Mr. G. Hansley, in a stubble-field on Kinton Cliff, Kinton Lindsey, Lincolnshire, on the 7th October, 1847, and was deposited in the Museum of the Philosophical Society at York. It has also been recorded from Sweden, Finland, Denmark, Germany, and Holland. According to Mr. W. Meves one was killed on the island of Öland (not on Gottland, as is stated by Nilsson) in February 1847; and Dr. Sundström informs me that he has convinced himself that it is the present species, and not *Otis undulata*. Professor Malmgren informs me that it has once been shot in Finland, on the

19th September, 1861, near Helsingfors. This specimen is now in the University Museum in that city. Mr. L. Taczanowski writes to me that an adult male was taken alive in December 1860, in the district of Ilza, Government of Radom, in Poland, and is now in the Warsaw Museum. There is a second male in the same collection, stated to have been obtained in Siberia; and this, Mr. Taczanowski informs me, is the specimen figured by Naumann under the name of *Otis houbara*.

It appears almost certain that the various occurrences in Germany recorded as of the Houbara Bustard really refer to the present species. Naumann states that one was obtained early in November 1800, at Cottwitz, near Breslau, in Silesia, a second was shot in Baden, and a third at Frankfort-on-the-Main. Tobias states (J. f. O. 1853, p. 213) that it has once occurred in Oberlausitz, and that the specimen in question was sent to Golz's Museum in Dresden; and Herr von Grävenitz possesses a beautiful male, which he says (J. f. O. 1862, p. 457) was shot by a peasant near Doberan, in November 1847. According to Mechlenburg (J. f. O. 1857, p. 292) an old female was shot out of a flock of six on the 12th November near Flensburg, in Schleswig, and came into his possession. Mr. C. F. Dubois, who published some interesting notes and a tolerably accurate figure of the present species (J. f. O. 1856, p. 301, pl. iii.), states that the first specimen obtained in Belgium was shot in September 1842, and came into the possession of the Director of Customs at Virton; the second, an old male, was obtained by Mr. Desmoor, of Rotselär, about eight miles from Löwen, in December 1844; and on the 3rd December, 1845, a third was killed in the district of Dieghem, on the Woluwe plain, about four miles from Brussels.

As above stated, the true home of this Bustard is in North-west India. Dr. Jerdon writes (B. of India, ii. p. 614) that the present species is "found throughout the plains of the Punjab and Upper Sindh, occasionally crossing the Sutlej and the Indus lower down; and it has been killed at Ferozepore, Hansi, and in various parts of Hurriana; but no records exist of its occurrence eastwards of Delhi. It is probably a permanent resident, as no notice is given of its occurring at any particular season. It frequents open sandy and grassy plains, or undulating sandy ground with scattered tufts of grass, also wheat- and other grain-fields; and is generally met with in such bare and open ground that, being shy and wary, it is approached with difficulty, except in the heat of the day, when it lies down in a thick tuft or other shelter, and can be approached with ease. Major James Sherwill informed me that it is very abundant across the Indus at Derajet, and towards the frontier of Sindh, and that a Black Hawk which hunts in pairs often kills a wounded bird, and has been seen to strike a sound one." Respecting its occurrence in Sindh, Mr. A. O. Hume says (Stray Feathers, i. p. 227) that, "though scarce compared with what it is in the North-western Punjab, it is very often met with in those barren plains which I have already described, where the Lana and Banee afford it shelter. I never myself saw above a couple of pairs in any one day, and never took the trouble to go after it." According to Mr. W. T. Blanford it is "found throughout Persia, being the only common Bustard of the country. It is only a summer visitant to the plateau, where it breeds, passing the winter in the lowlands of Southern Persia, Baluchistan, and Sindh." Persia appears to be the extreme western part where it occurs regularly; for in Armenia it is replaced by the African species, *Olis undulata*; but I must not omit to state that it was met with by Dr. Severtzoff in Turkestan, where, he states, it is found breeding, and also on passage throughout the country.

In habits McQueen's Bustard is stated to agree closely with the Houbara Bustard in every respect; and, like that species, it is often pursued and captured by tame Falcons, and is said to give excellent sport. Its nest, which is merely a hole scratched in the soil, is made in similar localities to that of *Otis undulata*; and its eggs are said to resemble those of that species; but I do not possess any for comparison.

The specimen figured is an adult male from Sindh in my own collection; and I have not deemed it necessary to figure the female, as the difference between the sexes is so small.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Sindh. *c*, ♂. N.W. India (*Burton*).

*E Mus. Howard Saunders.*

*a*, ♀. N.W. India.

*E Mus. H. B. Tristram.*

*a*, *b*. Sirsa, Punjab, December 31st, 1869.

## Family ŒDICNEMIDÆ.

### Genus ŒDICNEMUS.

*Pluvialis* apud Brisson, Orn. v. p. 77 (1760).
*Charadrius* apud Linnæus, Syst. Nat. i. p. 255 (1766).
*Otis* apud Latham, Ind. Orn. ii. p. 661 (1790).
*Œdicnemus*, Temminck, Man. d'Orn. p. 322 (1815).
*Fedoa* apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 28 (1816).
*Oidicnemus* apud Fleming, Brit. Anim. p. 114 (1828).

This genus contains eight species, five of which inhabit the Palæarctic, Ethiopian, and Oriental Regions, one only being found in the Western Palæarctic Region, two of the other three being inhabitants of the Neotropical Region, and the third found only in the Australian Region.

In many respects the Stone-Curlews resemble the Bustards in their habits; for they frequent open treeless localities, much less frequently such as are under cultivation than those which are barren and bare, and they are nearly always seen far away from water. They are, to a large extent, nocturnal in their habits, remaining quiet during the day, and starting off in search of food directly the evening sets in. They feed on worms, insects, &c.; and they are also said to devour mice, frogs, &c. Their call-note is loud and shrill, and, when uttered during still nights, may be heard at a considerable distance. Their flight is heavier than that of the Plovers, but lighter than the flight of the Bustard; their walk is light and quick; and they can run with great swiftness. When suddenly disturbed, they will squat and trust to their resemblance to the ground to escape observation. They make no nest, but deposit in a depression in the ground their eggs, which are stone-buff in colour, spotted and blotched with dark brown.

*Œdicnemus scolopax*, the type of the genus, has the bill slightly longer than the head, straight, stout, depressed at the base, the upper mandible straight to about the middle, and then decurved to the tip, lower mandible with the angle long and narrow; nasal sinus large, filled with a bare membrane; nostrils linear, oblong, placed in the anterior part of the nasal sinus; wings moderately long, pointed, the first two quills nearly equal, the secondaries nearly as long as the primaries; tail long, graduated; legs long, slender; tibia bare for a short distance; tarsus covered with hexagonal scales; hind toe wanting, the anterior toes short, scutellate, webbed at the base; claws short, slightly arched, obtuse.



1/2

J.G.Keulemans lith

M.&N.Hanhart imp

STONE-CURLEW.

ŒDICNEMUS SCOLOPAX.

# ŒDICNEMUS SCOLOPAX.

(STONE-CURLEW.)

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*Pluvialis major Œdicnemus vulgo dicta*, Briss. Orn. v. p. 77, pl. 7. fig. 1 (1760).
*Charadrius oedicnemus*, Linn. Syst. Nat. i. p. 255 (1766).
*Charadrius scolopax*, S. G. Gmel. Reise Russl. iii. p. 87, pl. 16 (1774).
*Le Grand Pluvier*, Buff. Hist. Nat. Ois. viii. p. 105 (1781).
*Charadrius illyricus*, Piller, It. Poseg. Sclav. p. 26 (1783).
*Otis oedicnemus* (L.), Lath. Ind. Orn. ii. p. 661 (1790).
*Œdicnemus crepitans*, Temm. Man. d'Orn. p. 322 (1815).
*Fedoa oedicnemus* (L.), Leach, Syst. Cat. M. & B. Brit. Mus. p. 28 (1816).
*Oedicnemus griseus*, Koch, Baier. Zool. i. p. 115 (1816).
*Œdicnemus europæus*, Vieill. Nouv. Dict. xxiii. p. 230 (1818).
*Oidicnemus bellonii*, Flem. Brit. Animals, p. 114 (1828).
*Oedicnemus desertorum*, C. L. Brehm, Vög. Deutschl. p. 539 (1831).
*Oedicnemus arenarius*, C. L. Brehm, op. cit. p. 539 (1831).
*Œdicnemus indicus*, Salvadori, Att. Soc. Ital. Sc. Nat. viii. fasc. 4, p. 371 (1866).

*Œdicnème criard*, French; *Alcaravão*, Portuguese; *Alcaravan*, Spanish; *Tellerita*, Maltese; *El Karuana*, Moorish; *Triel*, *Dickfuss*, *Dickknie*, German; *Griel*, Dutch.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 919; Werner, Atlas, *Coureurs*, pl. 6; Frisch, Vög. Deutschl. taf. 215; Fritsch, Vög. Eur. taf. 36. fig. 5; Naumann, Vög. Deutschl. taf. 172; Gould, B. of Eur. pl. 288; id. B. of G. Brit. iv. pl. 35; Schlegel, Vog. Nederl. pls. 209, 210.

*Ad.* pileo pallidè brunneo, plumis centraliter fusco striatis: capitis lateribus pallidioribus: striâ supraoculari pallidè cervinâ, et striâ fuscâ a mandibulâ ad regionem paroticam productâ: corpore suprà pallidè brunneo, plumis centraliter nigro-fusco striatis: remigibus nigricantibus, remigibus duobus externis versus apicem plagâ magnâ albâ notatis, et secundariis nonnullis albo apicatis: tectricibus alarum majoribus ad basin griseo-fuscis, versus apicem albis, fasciâ subapicali nigro-fuscâ notatis, tectricibus medianis concoloribus sed ad basin saturatioribus: caudâ ad basin pallidè brunneo et fusco marmoratâ, in parte reliquâ albâ, nigro-fusco terminatâ, rectricibus centralibus griseo-ochraceis fusco notatis: mento et gulâ albis: corpore reliquo subtùs albo, gutture, pectore et hypochondriis cervino lavatis et nigro-fusco striatis, subcaudalibus rufescenti-cervinis: rostro ad basin flavido, versus apicem nigro-corneo: iride flavâ: pedibus flavis.

*Juv.* adulto similis, sed coloribus saturatioribus et rectricibus centralibus minus fusco notatis.

*Adult Female* (Syria, 23rd March). Crown pale wood-brown, each feather with a dark central stripe; sides of the head paler, a light streak passes over the eye, and a dark one from the base of the lower man-

dible to the ear-coverts; back, rump, and least wing-coverts pale brown, each feather with a central dark blackish-brown stripe; quills blackish, the first and second quills with a large white patch towards the end, and some of the secondaries tipped with white; larger wing-coverts greyish brown, becoming white towards the tip, with a subterminal blackish bar; median coverts similar, but darker towards the base; the white on the coverts forming two distinct bars when the wing is extended; tail with the basal portion mottled with pale and darker brown, then nearly white, and finally tipped with black, the central feathers pale greyish clay-brown, mottled with darker brown; chin and upper throat pure white; rest of the underparts white; the lower throat, breast, and flanks washed with buff, and streaked with blackish brown; under tail-coverts pale warm rufous buff; bill blackish at the point and greenish yellow at the base; iris yellowish; legs pale yellow. Total length about 14 inches, culmen 1·55, wing 9·1, tail 5·0, tarsus 3·0.

*Adult Male.* Does not differ from the female.

*Young.* Resembles the adult, but is larger, the central tail-feathers are less boldly marked, and the markings in general on the upper parts are less clearly defined.

*Young in down* (Norfolk). Covered with close, short down; above sandy grey or stone-buff, delicately varied with pale brown; underparts buffy white; on each side and in the middle of the crown there is a black stripe; two similar stripes run along the back from the hind neck to the rump; one passes on each side of the hinder portion of the body; and there is also a small stripe at the base of each wing.

*Obs.* There is a considerable difference between the summer and autumn plumage of this bird. In the autumn, usually in August or September, the moult is completed, and the colours of the plumage are then very pure; but ere long the edges of the feathers become abraded, and the general coloration becomes duller, so that by the spring the entire plumage is much faded and very pale compared with what it was in the autumn. The Stone-Curlew moults only once in the year; and old birds frequently commence moulting as early as June.

Generally distributed, in suitable localities, throughout temperate and Southern Europe, the Stone-Curlew ranges into Africa, where, in the northern portion, it is a resident; and to the eastward it is found as far as India.

In Great Britain it is somewhat local in its distribution, and of latter years it has gradually become rare to what it was formerly. Mr. A. G. More states (Ibis, 1865, p. 430), the Stone-Curlew "breeds in Dorset, Hants, Sussex, Kent, Herts, Oxford, Bucks (perhaps extinct), Suffolk, Norfolk, Cambridge, Worcester (*Blyth*), Lincoln, Rutland, Nottingham, and in both divisions of Yorkshire, but is described as rapidly decreasing in most of its localities. I have no authority for its breeding in Devon, Essex, or Lancashire." Mr. Cecil Smith informs me that it is only known in Somersetshire as an occasional straggler, generally occurring in the autumn, though it is occasionally seen also in the spring. In South Devon it appears very early in the year, as he received one from Exmouth on the 27th March. It Guernsey it appears as an occasional straggler; and Mr. Smith saw one exposed for sale in the market in the first week in November 1871. It appears to be more numerous on the east side of England than elsewhere, and more especially in Norfolk and Suffolk, where it finds so many suitable localities; but even there it is becoming scarcer every year. Mr. J. Cordeaux says that it is now restricted to a few localities in Yorkshire. In East Yorkshire, he says, a few nest annually on Spalding Moor, near Holme, Beverley, also on Tollington Moor, near Market Weighton. In Scotland it is extremely rare:

Dr. Robert Walker informs me that one, which was shot and winged in a turnip-field near St. Andrews, on the 27th January 1858, was brought to him alive, and is now in the University Museum at that town; and this appears to be the only recorded instance of its occurrence in Scotland. In Ireland, Mr. Thompson states, it is only known as an extremely rare visitant.

In Great Britain, as in most parts of the Continent, it is a migrant, arriving from the south early in April and leaving again late in the autumn; but here and there stragglers remain over the winter. In Norfolk, according to Mr. Stevenson, it generally appears about the second week in April, and leaves again in October, collecting together in considerable numbers before departing; but in mild seasons some are seen as late as November and December; and he cites several instances of examples having been obtained in November, December, and February even during severe weather.

It has not been recorded from Sweden, Finland, or Northern Russia; but, according to Kjærbölling, it has been twice shot in Denmark; and Mr. A. Benzon informs me that one of these specimens, labelled "Sjælland," is now in the Copenhagen Museum. It is not uncommon in North Germany. Borggreve says that he found it numerous as far as Bromberg, but that in East Prussia it is only now and again met with, and is altogether wanting in Upper Silesia. Gloger says that it breeds not unfrequently in Silesia, and it is stated to be common in suitable localities in Pomerania, Brandenburg, and Saxony. In Western Germany its range extends further than that of the Bustard. Mr. Carl Sachse informs me that it does not occur in Rhenish Prussia, but it is very numerous in portions of Saxony, especially in the Altmark, whence he has received its eggs, as also from Carolath, in Silesia. It arrives in Holland in April and leaves in September, and breeds, Professor Schlegel says, in the dunes near Noordwijk and Wassenaar. In Belgium it appears irregularly on the spring and autumn passage on the heaths of the Ardennes, but is rarer in the central districts; and in France it is more abundant in the south than in the north, being principally found on passage in the latter. In Anjou and other provinces it is found throughout the year, becoming numerous in the plains of the Crau and in the Camargue. Professor Barboza du Bocage speaks of it as being tolerably numerous in Portugal; and Colonel Irby writes (Orn. Str. Gibr. p. 153) that the present species is "resident in considerable numbers, nesting generally about the beginning of May, and depositing its complement of two eggs usually on stony, dry ground. These birds are far more common in the winter months, and most so during their migration, which is northwards during March and April, and southwards in October, November, and December." It rarely remains to nest in Savoy, where it occurs on passage; and, according to Salvadori, it is resident and rather abundant throughout Italy, its numbers being much augmented at the seasons of passage. In Sicily it is most numerous in winter, frequenting uncultivated plains and the beds of the dried-up streams; but in the spring the majority take their departure; and Doderlein surmises that most of the individuals which remain to breed in the island are late arrivals from Barbary. In Sardinia it is common and resident; and, according to Mr. C. A. Wright, it is common in Malta in the spring and autumn until the end of November. It breeds there in June and July on the barren rocks in the uncultivated parts of the island, especially about Marfa. It is, he adds, sometimes seen late in the winter, and may be almost considered resident. In Southern Germany it is found on passage almost annually in Bohemia, but is not common everywhere.

Dr. Anton Fritsch says that it breeds near Prague, and in all probability near Raudnitz and Laun, as he met with it there late in the summer. The Ritter von Tschusi-Schmidhofen records it from Austria; and it is stated to breed in Styria. Messrs. Danford and Harvie-Brown speak of it as being very rare in Transylvania. It has, they write (Ibis, 1875, p. 419), "occurred at Alvincz, also on the Maros and in the Hátzeg valley. Herr Ottó records one, obtained at Szent Miklós, on September 23rd, 1867. It was struck down by a Sparrow-Hawk." Messrs. Elwes and Buckley met with it on one occasion only in Bulgaria, near Shitangik, late in April; but I have no record of its occurrence elsewhere in Turkey in Europe—though Dr. Krüper says that it is resident in Greece and Asia Minor, for it occasionally breeds there, and remains over winter. It winters on the Cyclades, and is stated to be common on the Ionian Islands, and to breed numerously in Crete. In Southern Russia it is very numerous in some localities; Professor von Nordmann states that large numbers breed near Odessa, where it arrives late in March or early in April, and leaves in October; and there is a specimen in the Berlin Museum from the Ural. In Asia Minor, as above stated, it is said to be resident; and Canon Tristram states that he obtained both bird and eggs near Jericho, in Palestine, and also observed it on the sand-dunes near Beersheba.

In Africa it appears to be confined chiefly to the northern portion of the continent. Captain Shelley writes (B. of Egypt, p. 230) that it is "plentiful throughout Egypt and Nubia, in pairs and families, affecting the more desert spots in the neighbourhood of small bushes, in preference to the cultivated fields, while they are occasionally met with on the sandbanks of the river. On the first approach of danger they crouch close to the ground—and when pursued, usually fly only for a short distance, and then run with considerable fleetness." Von Heuglin states that it visits Egypt and Nubia regularly during the winter, and he met with it in Kordofan and Abyssinia, and believes that he saw it in the Somali country. In the northern portion of the country he visited, a Stone-Curlew which, he states, is certainly the present species is resident; and he adds it is resident as far south as Assouan, and he met with it now and again on the coasts of the Red Sea.

Mr. J. H. Gurney, jun., remarks (Rambl. Nat. p. 200) that at Damietta he observed the present species perching on the roof of an old building. In Algeria, according to Loche, it is resident, and generally distributed in suitable localities; he took its eggs in July in the plains of Chêlif; and Mr. J. H. Gurney, jun., obtained it late in February. Mr. O. Salvin met with it constantly in the lake-districts; and Mr. L. Taczanowski writes (J. f. O. 1870, p. 52) that it is "common in the desert. This bird which is so wary with us, gets confused at the sight of sporting Falcons and does not try to fly away, but allows itself to be approached, when it lifts its wings and calls out very loudly. It defends itself, however, very bravely with its beak, and cleverly avoids the attacks of the Falcon." Colonel Irby speaks of it as being resident in Tangier, where it appears to be by no means uncommon; and it is recorded from the Canaries and Madeira. Mr. Godman writes of it (Ibis, 1872, p. 220):—"Said to be found in all the Canary islands. I found it tolerably abundant on a plain near the sea to the eastward of Port Orotava, in Teneriffe, where it breeds. Vernon Harcourt gives it in his list of stragglers in Madeira on Mr. Lowe's authority."

In Asia it is found throughout India down to Ceylon in suitable localities, but does not

appear to range as far north as Siberia. De Filippi met with it between Tabriz and Kazvin; Major St. John says that it is not uncommon about Bushire, but it was never seen on the plateau; and Mr. Blanford thinks it probable that it occurs also in Southern Persia. Mr. A. O. Hume says that it is not uncommon in Sindh, where he met with it on several occasions in rather open tamarisk jungle; and Dr. Jerdon writes (B. of India, ii. p. 654) that the present species "occurs in most parts of India down to the extreme south, frequenting bushy wilds, cleared spots in jungle, low, stony, and jungly hills, also now and then patches of grass with bushes interspersed, but generally in some retired and secluded spot. It is more rare in Lower Bengal and in Malabar than in most other districts." Mr. Holdsworth says that it is common in the north of Ceylon at all seasons, and he has also flushed it in the cinnamon-gardens at Colombo. Dr. Severtzoff records it from Turkestan, where he states it is found during the breeding-season.

The present species frequents large open flat localities, especially desert sandy places where there is no sign of cultivation; for in meadow-land or cultivated fields it is seldom seen, nor does it ever resort to mountainous or even hilly districts. Although it visits the water at least once a day, usually in the evening, yet it not unfrequently inhabits places where, in order to reach the nearest water, it has to traverse a considerable distance. During the day it is not often seen, as it remains quiet, resorting to some spot where it is not likely to be disturbed; and during the heat of the day it sleeps, squatting down on the ground or standing on one leg, and does not rouse itself into activity until the dusk of the evening begins to creep on, when it gets uneasy, flies hither and thither uttering its loud note, and commences to search after food with the greatest activity. When the nights are clear, and the moon gives a tolerably good light, it remains on the move throughout the whole night until sunrise. It is an exceedingly shy and watchful bird, and never permits itself to be approached within gunshot-range, and appears to be fully aware of the danger in permitting a man to approach it. It usually slips quietly away, running in a crouching position; and only when it has put a considerable distance between itself and the intruder does it take wing; but sometimes it will squat down, and trust to the similarity of its colours to those of the soil to escape observation. Owing also to the nature of the country it frequents, and its keen sight, it is able to note the approach of an intruder from afar, and loses no time in taking measures for safety. It appears usually to go in pairs, and, unless during passage, it is seldom, if ever, seen in flocks or small companies; nor does it affect the society of other birds. Its walk somewhat resembles that of the Bustard, but is lighter and easier; and it can run with great swiftness. Its flight does not at all resemble that of the Sandpiper, but looks far heavier—though it is comparatively much lighter than that of the Bustard. When on the wing it draws its neck in, and its heavy head and comparatively long tail and long legs render it easily recognizable.

Its cry is loud and shrill, distantly resembling that of the Curlew; but it lacks the clear flute-like portion that renders the cry of that bird by no means disagreeable or inharmonious. During clear still nights the note of the Stone-Curlew sounds very loud and clear, and may be heard at a considerable distance.

The food of the present species consists of worms, insects and insect-larvæ, and snails. In the early morning and late in the evening it visits the meadows, and especially places where

cattle have been pasturing, in search of food, returning during the day-time to the sandy or stony uncultivated places, where it is less likely to be disturbed; and here it sometimes searches for food, frequently turning the stones over with its bill in search of insects that may have taken refuge underneath. It is also stated to feed on small mammals, especially mice, and on frogs.

It nests in the unfruitful dry places where it is usually found during the day-time; and in some parts of Europe it is said to raise two broods in the season. Its nest is a mere depression scratched in the soil, without any lining, in which two or three eggs are deposited. These are stone-buff in colour, somewhat profusely spotted and blotched with dark, almost blackish-brown surface-marks, and more sparingly marked with pale purplish grey or greyish brown shell-spots and dashes. Many of the surface-markings are peculiarly contorted, as if drawn with a pen; and in the series of eggs in my collection I find the individual variation by no means small. In size they vary from 2 inches by $1\frac{19}{40}$ to $2\frac{4}{40}$ by $1\frac{1}{2}$ inch and $2\frac{10}{40}$ by $1\frac{19}{40}$.

Mr. Stevenson gives (B. of Norf. ii. p. 61) some interesting notes respecting the habits of this species, which I transcribe as follows:—"My own opportunities of observing this species have been somewhat limited; but in May 1864, in company with my friend Mr. Dix (who, as a resident at that time at West Harling, was well acquainted with their haunts), I had every facility, with the help of a good glass, for studying their habits in a wild state. In that neighbourhood, on the open 'brecks,' the eggs are usually laid on some slightly rising ground, whence a good look-out is kept, and where it is almost impossible to come upon the birds by surprise. If the exact spot is known, long before any near approach can be made, the old bird may be seen to rise slowly to its feet, and with arched back, like a French Partridge, walk slowly off a few yards, when, if further pressed, the pace quickens, and, joined probably by its mate from you know not where, so like are their tints to the surrounding soil, the pair rise on the wing, and with a strong quick flight, and outstretched legs, betake themselves to some distant part of the field, uttering at intervals their loud tremulous whistle. As ground-breeders they are necessarily exposed to many dangers, their eggs being so generally taken when discovered; and though Carrion-Crows are scarce in this game-preserving country, the Rooks, especially in dry seasons, are scarcely less active as egg-stealers. In this respect Mr. Dix considers that the eggs are safer when laid in the middle of a wide open field than, as is often the case, when situated within some fifty yards of a large fir 'slip,' or plantation. In the former case he has known the Curlew to fight off the Rook when suspiciously approaching its treasures; on the other hand the Rook, quietly perched on the trees, watches the Curlew leave her nest, and at once descends to plunder it. The shepherds, when driving their sheep on the lands, always mark the spot where the Curlew rises, and, by her alertness or not in doing so, judge whether the eggs are fresh or sat upon. Nearly all the eggs Mr. Dix has had brought to him at different times have been taken in this way by the shepherds or their lads; but when a single sheep has approached too near to a nest he has seen the old bird flutter its wings, and thus, by menacing attitudes, attempt to drive off the intruder."

Besides the present species there are only four species of Stone-Curlews inhabiting Africa, viz. *Œd. senegalensis*, *Œd. capensis*, *Œd. affinis*, and *Œd. vermiculatus*. Of these the most nearly allied to the present species is *Œdicnemus senegalensis*, Swainson, which differs only in having the median and lesser wing-coverts like the back; and thus the lesser bar across the back is

wanting. Mr. Harting, to whom I am indebted for the loan of his fine series of specimens, showed me a specimen sent to him as typical *Œdicnemus inornatus*, Salv. (Att. Soc. Ital. Sc. Nat. viii. fasc. 4, p. 371, 1866), and which is, I find, undoubtedly identical with *Œdicnemus senegalensis*.

*Œdicnemus capensis*, Licht. (Verz. Doubl. p. 69, 1823), which inhabits South Africa, may at once be distinguished from *Œdicnemus scolopax* by its larger size, more rufous and mottled upper parts, and especially by the upper surface of the wings being mottled and barred, on a warm rufescent ground, with blackish brown.

*Œdicnemus vermiculatus*, Cab. (v. d. Decken's Reise, iii. p. 46, pl. xvi. 1868), is stated by Finsch and Hartlaub to differ from the common Stone-Curlew in having the upper parts peculiarly dark in colour, with the markings almost zigzag in shape; and the bill is also peculiarly stout, reminding one of *Esacus*. I have not been able to examine a specimen of this bird, and can therefore only state the differences as given by Finsch and Hartlaub. It inhabits South Africa.

*Œdicnemus affinis*, Rüpp. (Monogr. d. Gatt. *Otis*, in Mus. Senckenb. ii. p. 210, 1837), which is widely distributed over Africa, is stated to differ from *Œdicnemus capensis* merely by its white abdomen and centre of the breast devoid of markings. I have not had a specimen for examination and comparison.

There are, besides the above five species, only three other Stone-Curlews known, viz.:—*Œdicnemus bistriatus*, Wagl., which inhabits South America; *Œdicnemus superciliaris*, Tschudi, which inhabits Peru; and *Œdicnemus grallarius*, Lath., which inhabits Australia and New South Wales.

The adult specimen figured and described is a female from Syria, in my own collection; and the young bird in down described is one kindly lent to me by Mr. J. E. Harting.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Pagham, Sussex (*R. B. Sharpe*). *b*, ♀, *c*, ♂. Syria, March 2nd, 1876 (*W. Schlüter*). *d*, ♀. Zoulla, Abyssinia, March 11th, 1868 (*W. Jesse*). *e*, ♂. Secunderabad, India, October 29th, 1869 (*G. M. Slaughter*).

*E Mus. H. B. Tristram.*

*a*, *b*. Sahara, N. Africa. *c*. Jericho, December 31st, 1863 (*H. B. T.*). *d*, ♀. Maunbhoom, India, March 1865 (*Beavan*).

*E Mus. J. E. Harting.*

*a*, ♂. Near Chichester, November 6th, 1871. *b*, ♀. Warwickshire. *c*, ♀. Leadenhall Market, December 5th, 1870 (*J. E. H.*). *d*, ♂. Brandon, Suffolk, July 1869. *e*. Tangier, Morocco, June 1872 (*Baron A. von Hügel*). *f*. Morocco (*Boucard*). *g*. Egypt, March 15th, 1870 (*G. E. Shelley*). *h*. Shoobia, near Cairo (*J. K. Lord*). *i*. Erzeroom (*Pavillon*). *k*. India. *l*. Peshawar, N.W. India (*Griffiths*). *m*. Tamak, N.W. India, September 6th, 1860 (*Schmidt*). *n*. N.W. India. *o*, *pull.* Norfolk (*Cooper*).

## Family GLAREOLIDÆ.

### Genus GLAREOLA.

*Glareola*, Brisson, Orn. v. p. 141 (1760).
*Hirundo* apud Linnæus, Syst. Nat. i. p. 345 (1766).
*Trachelia* apud Scopoli, Ann. I. Hist. Nat. p. 110 (1769).
*Pratincola* apud Degland, Orn. Eur. ii. p. 107 (1843).

The Pratincoles inhabit the Palæarctic, Ethiopian, Oriental, and Australian Regions, two species being found in the Western Palæarctic Region. In their general habits they resemble the Plovers; but they are often to be met with in dry sandy localities far from water, though they also frequent marshy places and the shores of lakes and pools. They are gregarious, frequently collecting in larger or smaller flocks, and even breed in proximity to each other, forming larger or smaller colonies. They run with great ease and celerity; and their flight is very rapid, resembling that of the Swallows. They feed on insects of various kinds, and not unfrequently capture their prey on the wing. They are said to hunt after their food quite late in the evening, though they are not nocturnal in their habits. Their cry, which is usually uttered when they are on the wing, is said to be a sound between a scream and a whistle. They deposit their eggs, which are two or three in number, on the bare ground, without even scratching a hole for their reception. These are oval in shape, pale ochreous or dull slate-coloured, marbled and blotched with pale greyish brown and dark blackish brown.

*Glareola pratincola*, the type of the genus, has the bill short, moderately stout, higher than wide at the base, compressed towards the end; culmen first straight, then decurved to the tip, which is sharp, but slightly rounded; gape-line commencing below the eyes, and arched; nostrils basal, lateral, oblong, oblique; wings very long, pointed, the first quill longest; tail long and deeply forked; legs moderately long, slender, the tibia bare for a short space, the tarsus reticulated; hind toe small; anterior toes moderately long, the centre ones much exceeding the lateral ones in length; claws slender, slightly arched and acute, that on the middle toe very long and with the inner edge slightly pectinate.



COLLARED PRATINCOLE.

GLAREOLA PRATINCOLA

NORDMANN'S PRATINCOLE.

GLAREOLA MELANOPTERA

# GLAREOLA PRATINCOLA.

(COMMON PRATINCOLE.)

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*Glareola torquata*, Brisson, Orn. v. p. 145 (1760).
*Hirundo pratincola*, Linn. Syst. Nat. i. p. 345 (1766).
*Trachelia pratincola* (Linn.), Scopoli, Ann. i. Hist. Nat. p. 110. no. 161 (1769).
*La Perdrix de Mer*, Buff. Ois. viii. p. 347 (1783).
*Austrian Pratincole*, Lath. Gen. Synop. v. p. 222, pl. lxxxv. (1785).
*Glareola austriaca*, Gm. Syst. Nat. i. p. 695. no. 1 (1788, ex Lath.).
?*Glareola nævia*, Gm. tom. cit. p. 696. no. 3 (1788).
*Glareola torquata*, Meyer, Taschenb. Deutsch. Vogelk. ii. p. 404 (1816).
*Glareola pratincola* (L.), Leach, Trans. Linn. Soc. xiii. p. 131 (1822).
*Pratincola glareola*, Degl. Orn. Europ. ii. p. 107 (1843).
*Glareola limbata*, Rüpp. Syst. Uebers. p. 113. pl. 12 (1845).

*Perdrix de Mer*, *Glaréole à collier*, French; *Perdiz do Mar*, Portuguese; *Canastera*, *Cagazo*, Spanish; *Pernice di mare*, *Perdrixi de mari*, *Perdrighe marina*, Italian; *Giarol*, *Halsband-Giarol*, German; *Tircushka lugovaya*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 822; Werner, Atlas, *Alectorides*, pl. 1; Kjærb. Orn. Dan. taf. 37; Fritsch, Vög. Eur. taf. xxxiii. figs. 6, 7; Naumann, Vög. Deutschl. taf. 234; Gould, B. of Eur. pl. 265; id. B. of G. B. iv. pl. 46; Roux, Orn. Prov. pl. 327.

*Ad.* corpore suprà grisescenti-fusco, pileo saturatiore, nuchâ, capite laterali et regione paroticâ rufescente ochraceo lavatis: remigibus nigricantibus versus apicem grisescenti-brunneis, primariis intimis in pogonio interno versus apicem vix albido marginatis, secundariis albo apicatis: caudâ furcatâ, rectricibus ad basin nigricantibus, ad apicem albis, extimis apicaliter nigridis, in pogonio interno dimidio basali et in pogonio externo pænè usque apicem albis: supracaudalibus albis: gutture ochrascenti-fulvido, strictè nigro circumdato: pectore et hypochondriis grisescenti-fulvidis: abdomine et subcaudalibus albis: subalaribus et axillaribus castaneis: rostro nigro, ad basin rubro: iride fuscâ: pedibus nigricantibus.

♀ haud a mare distinguenda.

*Juv.* corpore suprà plumis fulvido et nigro marginatis et albido apicatis, gulâ et gutture sordidè ochraceis, pectore nigricante striato et maculato.

*Adult Male* (Barcelona, 4th May). Upper parts dull earth-brown, darker on the crown; nape, sides of head, and auriculars washed with rusty yellowish; wing-coverts with a faint greenish gloss, only perceptible in certain lights; primaries black, with a faint greenish gloss, fading into greyish brown towards the tips, the inner ones with a slight whitish edge towards the tip of the inner web; secon-

daries brownish black, broadly tipped with white; tail forked, the outermost feathers 2·3 inches longer than the centre ones, the outer rectrices white on the outer web nearly to the tip, and on the inner web on the basal half, being otherwise blackish, remaining rectrices white on the basal, and blackish brown on the terminal half, the central ones being slightly tipped with white; upper tail-coverts white; lores and a streak passing under the eye and round the breast, forming a shield, black, the inner part of this shield being yellowish buff; breast and flanks pale greyish brown; rest of the underparts white, on the upper part of the abdomen clouded with yellowish buff; under wing-coverts and axillaries rich fox-red; bill black at the base of the lower mandible, and the basal edge of the upper mandible rich red; legs brownish black; iris dark brown. Total length about 8½ to 9 inches, culmen 0·7, wing 7·5, tail 4·8, tarsus 1·25.

*Female.* Undistinguishable in plumage from the male.

*Young* (Seville, Spain, 29th August). Differs from the adult in having the feathers on the upper parts edged with fulvous and black, and tipped with white; the throat dirty yellowish; the breast striped and marked with blackish, the lower part of the breast washed with yellowish, and the tail-feathers bordered at the tip with dirty white; the outer feathers being much shorter than in the adult bird.

The present species is found in Central and Southern Europe (straggling occasionally as far north as Great Britain), Africa, and Asia, at least as far east as India.

In Great Britain it is a rare bird; but not a few instances of its occurrence are on record. Mr. Harting, in his 'Handbook of British Birds,' enumerates twenty-one occurrences as follows:—One at Boldness, Cumberland, 1807; one near Ormskirk, Lancashire, in 1807; one near Truro, Cornwall, in September 1811; one at Unst, Shetland, 16th August, 1812; one Ende Waters, Surrey, prior to 1821; two Breydon, Yarmouth, May 1827; one Branston Hall, near Lincoln, 15th August, 1827; one Wilbraham Fen, Cambridge, May 1835; one Castle Freke, co. Cork; one Blakeney, Norfolk, May 1840; one Tilshead, Salisbury Plain, November 1852; one Staxten Wold, Scarborough, May 1844; one Bedlington, Northumberland, February 1850; two seen at Exmouth (fide *Rowe*); and two seen on the Warren, Exmouth, 7th September, 1851; one Stokes Bay, near Gosport, in October 1864; one Feltwell, Norfolk, June 1868; and one Whitby, 19th October, 1871. The earliest occurrence was recorded by Mr. Bullock (Linn. Trans. vol. xi. p. 177) as follows:—"The first instance of this bird having been killed in Britain occurs in 1807, when one was shot in the neighbourhood of Ormskirk, in Lancashire; it was preserved by Mr. J. Sherlock of that place, from whom I purchased it a few days afterwards. On the 16th of August last I killed another specimen of this bird (now sent for the inspection of the Society) in the Isle of Unst, about three miles from the northern extremity of Britain. When I first discovered it, it rose within a few feet and flew round me in the manner of a Swallow, and then alighted close to the head of a cow that was tethered within a few yards distance. After examining it a few minutes I returned to the house of T. Edmondston, Esq., for my gun, and, accompanied by that gentleman's brother, went in search of it. After a short time it came out of some growing corn, and was catching insects at the time I fired; and being only wounded in the wing we had an opportunity of examining it alive. It ran with the greatest rapidity, when on the ground or in shallow water, in pursuit of its food, which was wholly of flies, of which its stomach was full. It was a male, and weighed 2 oz. 11 dwts. None

of the gentlemen of the island who saw it ever observed it in the country before. The one killed near Ormskirk is in the possession of the Right Hon. Lord Stanley."

Just as the present sheets are going through the press I am enabled to record another recent occurrence of the Pratincole in Great Britain. In a letter to Mr. J. E. Harting (which that gentleman has kindly forwarded to me), dated 10th June, 1874, Mr. E. Hearle Rodd writes as follows:—"I was very glad to have an opportunity yesterday of examining in the flesh a good-plumaged adult specimen of the Pratincole, which was captured at the Lizard, and sent by the Rev. P. V. Robinson to be preserved by Mr. Vingoe. The bird was in fair condition; but in length it exceeds the dimensions given by Yarrell, being at least $10\frac{1}{2}$ inches to the end of the tail, which, by the by, in their extremities are rather inclined to be filamental—certainly more tapering than in Yarrell's figure; this may account for its excessive length. I have not succeeded in before detecting this curious miscellany of a bird in Cornwall over a period of nearly half a century."

I do not find it recorded from Sweden, Norway, or Finland; and in Russia it appears to be less numerous than its near ally, *Glareola melanoptera*. In Northern Germany it is a rare species; but, according to Borggreve, it is said to have occurred several times in Silesia, once in Anhalt, and once in Münsterland. It is recorded from Denmark by Kjærbölling, who says that one single specimen was obtained near Ulfshale-on-Moen on the 18th May, 1831. Several specimens have been captured in Belgium; but I do not find it recorded from Holland. In France it occurs only accidentally in the northern departments, but is common in the southern portions of the country. Mr. Crespon, in his 'Ornithologie du Gard,' says that it arrives in Southern France about the middle of April and leaves again late in August, migrating in small flocks of fifteen to twenty individuals. Professor Barboza du Bocage states that it is common in Portugal; and in Spain it is, according to Lord Lilford, Colonel Irby, and Mr. Howard Saunders, common. Lord Lilford says, in a letter just received, that it "arrives in Southern Spain in vast numbers about the end of March; and although the great majority remain in the Marisma, individuals are often to be seen close to the town of Seville hawking for insects, sometimes high in the air, sometimes skimming low over the corn-fields and alighting on the patches of fallow ground. I have been often struck by the remarkable similarity in the flight, note, situation of nest, and the eggs of this species to those of some of the Terns, more particularly in the Marisma, where hundreds of this bird and the two species *Hydrochelidon hybrida* and *fissipes* may be observed together. The Pratincole has a curious habit of cowering on the grouud with wings extended, particularly when approached by a horse and rider; this habit has nothing to do with a desire to divert attention from the nest, as I have observed it long before the bird had begun to lay. I was fortunate in obtaining for Mr. Gould in 1869 some recently hatched young of this bird, which run immediately on leaving the egg. About Seville this bird is called *Canastera*, but in the Coto de Doñana is known as *Cagazo*." Mr. Howard Saunders also (Ibis, 1871, p. 385) speaks of it as being "abundant in the 'Marisma,' where it deposits its eggs, never at any great distance from water, but invariably on dry ground. The eggs never exceed three in number, being often but two, which are laid with their axes parallel. On the wing this bird has many of the characteristics of the Terns; but on the ground its motions are Plover-like; and the young run immediately on emerging from the shell." Mr. von Homeyer

(J. f. O. 1862, p. 423) says that he only saw one pair on the Balearic Islands, where it is an extremely rare species. Bailly records two instances of its occurrence in Savoy; and in Northern and Central Italy it appears to be of somewhat rare and exceptional occurrence; but in Sicily, especially in the south, where the nature of the ground is suitable to its habits, it is abundant, and breeds there. Mr. A. B. Brooke records it as sometimes met with in Sardinia (Ibis, 1873, p. 338) during migration, but rare. I have a series of specimens obtained at Malta by Mr. C. A. Wright. Lord Lilford met with it in the Ionian Islands, and says (Ibis 1860, p. 239) that it "arrives in Corfu and Epirus in considerable numbers in April, and remains a few weeks in the country. I have found that, though these birds are not easy to approach by walking straight at them, they will squat if one makes a circuit round them gradually lessening the distance, and will allow themselves to be nearly trodden upon before taking wing. Large numbers frequent the racecourse at Corfu in April. The Corfiote name for this species is '*Pernice di mare.*' The food of the Pratincole appears to consist almost exclusively of various species of beetles." In Greece, according to Lindermayer, numbers arrive after the æquinoctial gales; and most pass north, though a few remain to breed in Northern Greece. In September they pass again. On the islands they occur during winter, but not in summer. In Southern Germany it is rare; and Dr. Anton Fritsch only records the occurrence of one (J. f. O. 1871, p. 384) in Bohemia, a specimen having been obtained near Pardubick in May 1862. On the Lower Danube, however, it appears to be common, though I did not observe it when there, being probably too early in the season, as I left in May; but Dr. Finsch speaks (J. f. O. 1859, p. 385) of hundreds breeding in the islands of the Danube. Messrs. Elwes and Buckley obtained a specimen from Mr. Robson which had been shot near the Bosphorus; but, judging from the fact that all the specimens sent to me by Mr. Robson belong to *Glareola melanoptera*, it appears to be rare there. It is difficult to define its range in Southern Russia, as it is possible that some authors refer to *G. melanoptera* under the name belonging to the present species. Von Nordmann appears not to have distinguished between the two species, but says that a Pratincole, which he calls *Glareola pratincola*, is abundant in the districts bordering the Black Sea and Caspian; and Mr. H. Goebel (J. f. O. 1871, p. 137) speaks of the Pratincole being numerous in the province of Cherson, especially on the sea-coast; and in the autumn, when they are found in flocks of several hundred individuals, and are very tame, large numbers are killed. The present species is found in Asia Minor, and breeds numerously outside Smyrna, and likewise occurs in Palestine, where, according to Canon Tristram (Ibis, 1868, p. 322), it "disappears in winter, but returns in great numbers to all the marshy plains in spring, when we found them on their breeding-grounds, where they can be shot in any numbers, as they keep hovering over the intruders, undismayed by repeated discharges of the gun."

In Africa it extends far south during the winter season, and has a most extensive range on that continent. Captain Shelley says that it "arrives in Egypt in great numbers about the middle of April. I first met with it near Assouan on the 15th of that month, and afterwards saw it in great abundance as I descended the Nile. . . . . Probably the larger portion of these flocks do not remain in the country to breed, but pass on into Europe, returning again in October or November on their way south." It occurs at Kordofan, Sennaar, and, according

to Dr. Th. von Heuglin, at Dahalak, and on the coast of Abyssinia. Mr. Jesse obtained one in Abyssinia; and Mr. Blanford says that he "obtained two specimens at Rairo, in Hababb, at about 1000 feet above the sea, on a grassy plain far from any water. There is no question but that Rüppell's species was founded on a young bird." Mr. C. F. Tyrwhitt Drake, in his contributions to the ornithology of Tangier and Eastern Morocco, says that it was "occasionally seen at Martine;" the various authors on the ornithology of Algeria all agree in its being common there; and Canon Tristram (Ibis, 1860, p. 79) says it is "extremely abundant whether near marshes or lakes. Found at Aïn el Ibel, Western Algeria, in October, and breeding in the same district in June, as well as the following year throughout the eastern district."

According to Dr. Hartlaub it has been met with at Senegal, Gambia, and on the Gold Coast, and it has been met with as far south as Natal. Mr. J. H. Gurney (Andersson's Birds of Damara Land, p. 265) says that he has not seen a specimen from Damara Land; "but I find," he says, "by one of the MSS. left by Mr. Andersson, that of two Pratincoles contained in a collection of Damara birds sent by him to London for identification, one was ascertained to be an example of *Glareola nordmanni*, and the other an adult of the present species. This and an example received by myself from Natal are the only two well-authenticated instances of the occurrence of this Pratincole in Southern Africa which have come to my knowledge. Mr. Andersson alludes to this species in his MS. notes, and also in his notes contributed to the Appendix to Chapman's 'Travels,' p. 415, as not being uncommon at Lake Ngami; but I believe he intended these remarks to refer to the preceding species [*G. melanoptera*], as at the time he made them he seems not to have been aware of the distinction between these two nearly allied Pratincoles, although he subsequently became acquainted with the differences between them."

To the eastward the present species certainly occurs as far as India, as Mr. Blyth (Ibis, 1867, p. 163) states that it has been obtained both in the Bombay and Madras Presidencies; but as a very closely allied race (*Glareola orientalis*) is found in Eastern Asia, it is most difficult to trace the exact range of our common Pratincole in that part of the world. De Filippi met with the present species in Persia, at Erivan and Sultanieh; and Mr. Blanford has lent me several specimens for examination, obtained by him in Persia.

Severtzoff records it as found everywhere in Turkestan, except in the north-eastern districts. It breeds at Chu, Tallas, Susamir, the lower Narin, the Karatau mountains, and the western part of the Thian-shan mountains, along the river Syr-Darja, the Zarevshan valley, and the river Kisil-Cum, and in localities not higher than 10,500 feet above the level of the sea. Dr. G. Radde (Reis. Süd. Ost-Sib. pp. 307, 308) states that it has been found in Mongolia, and he found several pairs breeding about 20 versts eastward of Abagaitui, near the broad Urtuiskisch valley. He states that he collected specimens which belonged to the European species; but he evidently did not know any thing about the distinctions between the present species and *G. orientalis*, and I am very doubtful as to whether he did not obtain this latter race. He gives measurements; but he measures the tail only to the centre, and does not state if it is deeply forked or not. He further states that in Western Siberia he last saw it in the Barabinisk steppe. *Glareola orientalis*, Leach, the eastern form of the present species, which is found in India, South-eastern Asia, the Malay archipelago, and North Australia, differs from the present species in having a much shorter and less deeply forked tail, the outer feathers being only about one inch longer than the centre

ones, in being, if any thing, a trifle less in size, in lacking the white tips to the secondaries, and in being generally less grey and more rufous in tinge of colour, especially on the underparts of the body, the breast being washed with rufous ochre.

In its habits the Pratincole somewhat resembles the Plovers; but it is often met with at some distance from water, on the sand-plains and in open desert places. It runs with ease, and appears to obtain a large portion of its food on the ground, though it very frequently catches the insects on which it feeds on the wing. It feeds exclusively on insects, chiefly coleoptera, and is said to hunt after food in the dusk of the evening. The late Captain Rowland M. Sperling said that he had observed numbers hawking after insects over the fields, flying at a height of about twenty feet, and continually uttering a sound between a low scream and a whistle; and Captain Shelley, who saw numbers on the Nile, says (B. of Egypt, p. 227) that he "sometimes observed them on the bare fields, but more frequently by the sides of small pools or on the numerous sandbanks of the river. The flight is very peculiar and varied, the birds at times passing rapidly through the air in flocks, like Plovers, or else floating at a considerable height with outspread wings, or, again, playing over the water after the manner of Terns. When I first saw a single specimen of this bird rise from a small pool, I should have taken it for a Green Sandpiper, which it closely resembled in the colour of its back and flight, had it not been for the greater length of the pinions."

Mr. Salvin, who found it in the tablelands of the interior of Algeria, frequenting the salt-lakes and freshwater-marshes, says (Ibis, 1859, p. 354), "its fearless manner and familiar habits cause it to rank high among the interesting birds of the country; and I remember few that I have watched with greater pleasure. When in proximity to their nests, the whole flock come wheeling and screaming round, while some dart passionately down to within a few feet of the intruder's head, retiring again to make another descent. When the first transports of excitement are over, they all alight one by one on the ground. Some stand quite still, watching with inquiring gaze; while others stretch themselves out, first expanding one wing, then the other, and, sitting down, extend both legs. In this position they remain some seconds as if dead, when, suddenly springing up, they make another circuit overhead, and the whole flock passes quietly away."

The Pratincole breeds in Southern Europe and Northern Africa, making no regular nest, but merely depositing its eggs, three in number, in a depression in the sand; and Mr. Salvin remarks that they are usually placed with their axes parallel. The breeding-season appears to be in May or early in June. My friend Mr. H. Seebohm sends me, as usual, the following excellent notes on the breeding-habits of the present species, which he met with in Greece and Asia Minor:—"I found *Glareola pratincola* breeding in considerable numbers on the islands in the lagoons of Missolonghi in 1873, and in a precisely similar locality a little to the north of the entrance to the Gulf of Smyrna in 1872. In the former locality I found plenty of fresh eggs in the last week of May; and in the latter most of the eggs were almost ready to hatch in the second week of June. At Missolonghi the birds were wild, flying round us uttering their peculiar cry before we landed on the islands. In Asia Minor, on the other hand, they were evidently sitting hard, and allowed us to land and approach them before they left their nests. They then evidently attempted to lure us away from their treasures, by feigning lameness,

standing with drooping wings, or running along the ground as if unable to fly. When once upon the wing their flight was rapid and powerful, like that of a Tern. They are not, strictly speaking, gregarious in their habits. We never found any thing like a colony of them upon any one island. We rarely visited any of the numerous islands without finding at least one pair of birds upon it; and perhaps none of the islands contained more than half a dozen pairs, and they would be scattered about at a distance from one another. They do not make any nest, but lay their eggs upon the bare ground, seldom, if ever, taking the trouble to scratch a hollow or to collect what dry grass or seaweed may be at hand. They seem studiously to avoid coarse grass or rank herbage, and prefer to lay their eggs on the dried mud, sheltered only by the straggling plants of *Salsola*, which grow all over the lowest and wettest parts of the islands. The number of eggs was usually two, occasionally three, and only in one instance four. The shell of the egg is very thin. They are very oval, being scarcely more pointed at one end than the other. The ground-colour varies from a citron or yellow ochre to pale slate. The eggs are very richly spotted all over with streaks and blotches of dark brown, approaching black, in some instances most so at the larger end. The underlying spots, of pale greyish brown, are usually very distinct, and often impart great beauty to the egg, giving it a marbled appearance. They vary considerably in size, from $1\frac{15}{40}$ by $1\frac{36}{40}$ inch to $1\frac{4}{40}$ by $1\frac{35}{40}$ inch. A more usual measurement is $1\frac{10}{40}$ by $\frac{38}{40}$ inch."

I have a tolerably large series of eggs of this Pratincole from Spain and Algeria, all of which have the ground-colour dull clay-ochre; but otherwise they agree closely with the above description given by Mr. Seebohm. One egg is unusually dark, and closely marked; and in one or two others the spots are smaller and more thinly scattered than in the others.

The specimen figured to the left, on the same Plate with *Glareola melanoptera*, is an adult bird obtained by myself near Barcelona, in Spain, in the month of May. I have not figured the young bird, as it closely resembles the specimen of *G. melanoptera* which is figured, except that the axillaries and under wing-coverts are red, not black.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Barcelona, May 5th, 1866 (*H. E. D.*). *b*, ♂. Malta, June 7th, 1867 (*C. A. Wright*). *c*, ♀. Gennesareth, May 24th, 1864 (*H. B. Tristram*). *d*. Egypt (*Cochrane*). *e*. Egypt, April 15th, 1870 (*G. E. Shelley*). *f*. Syria (*Cochrane*).

*E Mus. C. A. Wright.*

*a*, ♂, *b*, ♀, *c*, ♂. Salini, Malta, May 1871 (*C. A. Wright*). *d*, ♀, *e*. Salini, Malta, April 25th, 1874 (*C. A. Wright*).

*E Mus. Ind. Calc.*

*a*, ♂, *b*, ♀. Shiraz, Persia, June 1869 (*Blanford*).

*E Mus. J. E. Harting.*

*a*. Germany (*Keitel*). *b*, ♀. Seville, June 12th, 1869 (*Howard Saunders*). *c*, ♀. Plain of Huleh, Palestine, May 27th, 1864 (*H. B. Tristram*). *d*. Morocco, August 1872 (*Boucard*). *e*. Algiers (*Verreaux*). *f*, ♀. Algeria (*Parzudaki*).

*E Mus. Howard Saunders.*

*a*, ♀ *juv*. Near Seville, August 25th, 1869. *b*, *c*, ♂. Malaga, April. *d*, ♀. Seville, May 12th (*H. S.*). *e*, ♂ *ad*. Malaga, April 20th.

# GLAREOLA MELANOPTERA.

(NORDMANN'S PRATINCOLE.)

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*Glareola pratincola*, Pall. Zoogr. Rosso-As. ii. p. 150 (1831).
*Glareola*, var., Nordmann, Bull. Soc. Imp. Nat. Mosc. xvii. p. 450, "Odessa" (1834).
*Glareola melanoptera*, Nordmann, op. cit. ii. p. 314 (1842).
*Glareola nordmanni*, Fischer, tom. cit. p. 314, pl. 2 (1842).
"*Glareola pallasii*, Bruch." Schleg. Rev. Crit. p. lxxxi. et p. 91 (1844).

*Tircushka stepnaya*, Russian.

*Figuræ notabiles.*

Nordmann, *l. c.*; Gould, B. of Asia, pl. 2; Fritsch, Vög. Eur. taf. 33, figs. 9, 10; Gurney, Ibis, 1868, pl. viii.

♂ *ad. Glareolæ pratincolæ* simillimus, sed subalaribus et axillaribus nigris nec castaneis, remigibus secundariis saturatè brunneis nec albo apicatis, corpore suprà et pectore saturatioribus distinguendus.

*Adult Male* (Djeddah, Red Sea). Resembles *Glareola pratincola*, except that the upper parts are rather darker, the breast and flanks also being more darkly coloured, the secondaries are not tipped with white, and the under wing-coverts and axillaries are jet-black instead of chestnut-red. Total length about 9·5 inches, culmen 0·75, wing 7·3, tail 4·3, tarsus 1·4.

*Bird of the year* (Turkey, 19th October). Resembles the adult, excepting that the feathers on the upper parts are slightly edged with fulvous, and the black line enclosing the throat of the adult is wanting, the throat being dirty ochre-yellow, marked with black, and the breast is marked with blackish.

In Europe the present species of Pratincole is only found in those countries which lie in the extreme east, and, so far as I can ascertain, has not occurred west of Turkey; but in Africa it has been met with as far south as the Cape of Good Hope.

It is said to have occurred in Greece; but there appears to be no proof of its ever having been met with there. I have several specimens obtained near Constantinople by Mr. Robson.

In Russia it appears to occur as far north as $56\frac{1}{2}^{\circ}$ N. lat. Mr. Sabanäeff informs me that he met with it on the eastern slopes of the Ural as far north as that, and he thinks that it breeds in the Shadrinsk district; Eversmann, he says, states that its northern limits are in 54° N. lat.; Bogdanoff found it breeding in the district of Menzelinsk, and gives as the boundaries of its range the Belaga and Kama rivers; but Falk met with it on the Ufa nearly a hundred years ago. Jacovleff says that it breeds near Astrachan; there are specimens from the Ural and the Caspian in the Leyden Museum; and Dr. E. Eversmann, in his notes on the ornithology of Russia, says (J. f. O. 1853, p. 293) that all the Pratincoles he observed there belonged to the present species, which is very common in the steppes. He further states that the eggs are white,

which is clearly a mistake. Von Nordmann (*l. c.*) says that both species are very common on the steppes of Southern Russia. In August flocks of several hundred individuals of this species were seen on the steppes, and also smaller flocks of *Glareola pratincola*, the latter keeping quite apart from the present species. In Western Bessarabia, and on the Pruth and Danube, he found the common Pratincole much more numerous; and, indeed, the present species appears to be a much more eastern bird. Pallas (*l. c.*) speaks of it as being found in Western Siberia and in the country bordering the Irtisch river. Brandt refers to it as occurring in the Altai range; and Ménétries (Cat. Rais. p. 53) states that it is found in flocks of considerable size about the lakes near Saliane and in the steppes near the Terek river. It occurs in Asia Minor, and, according to Mr. Gould (B. of Asia, pt. ii.), is found in Persia, one of the specimens he figured having been sent from there to Mr. T. C. Eyton; but the specimens obtained in that country by Mr. Blanford are all *G. pratincola*. Canon Tristram never saw it in Palestine; but Messrs. Finsch and Hartlaub (Vög. Ost-Afr. p. 634) speak of it as having been recorded from Arabia; and Von Heuglin (Syst. Ueb. p. 55) says that it occurs in small flocks in the fields of Egypt and Nubia, and that he found it most abundant in the Fayoom and Central Egypt in October 1851. I possess a specimen from Djeddah, on the Red Sea; and Dr. Kirk (Ibis, 1864, p. 332) says that he met with it at Lake Nyassa, on the sand, in October, and also on the Zambesi in the same month, but it was not seen at any other season of the year. Mr. Layard (B. of S. Afr. p. 291) says, "it appears in great numbers on the eastern frontier and Natal during the visitations of the locusts, upon which it feeds. I am informed that it hawks about the clouds of the destroying insect, now and then darting into the mass and never failing to secure a victim. It is said to run and fly with great swiftness." According to Messrs. Finsch and Hartlaub (*l. c.*), it occurs in Great and Little Namaqua Land and on the Orange River; and Mr. Harting possesses a pair, obtained by the late Mr. Andersson at Objimbinque. DuChaillu met with it at Gaboon; and Dohrn found it on Prince's Island.

In its habits and mode of nidification the present species closely agrees with *Glareola pratincola*, and, like that bird, it frequents the steppes and open treeless localities. In South Africa it is a welcome guest with the farmers, as it does infinite good in assisting to destroy the locusts. Some excellent notes were published in 'The Field' of 26th February, 1870, on the habits of this bird, by a gentleman who was engaged in a survey near the Fish River, under the Colonial Engineering Department, which I cannot do better than transcribe as follows:—"The principal enemy of these great swarms [of locusts], and the valued friend of the Cape farmer, is the small locust-bird (*Glareola melanoptera*). . . . . These birds come, I may say, in millions, attendant on the flying swarms of locusts; indeed the appearance of a few of them is looked upon as a sure presage of the locust swarms being at hand. Their mode of operation, as I saw it, was as follows:—They intercept a portion of the swarm and form themselves into a ring of considerable height, regularly widening towards the top, so as to present the appearance of a revolving balloon or huge spinning-top. They thus fly one over the other, and, hawking at the locusts, gradually contract their circle and speedily demolish the locusts within its limits. As their digestion, like that of all insectivorous birds, is very rapid, the form in which they thus enclose their prey is admirably adapted to enable the lower to escape the droppings of the upper birds. When they have consumed this portion of the swarm, they follow up the main body and

commence another attack, and so on, until night sets in and the birds happen to lose the swarm or the locusts are all devoured. I should not forget to mention that the beak of these birds is exactly of such a shape and such dimensions that when they seize the locust the snap cuts off the four wings, and a passer-by sees a continual shower of locusts' wings falling to the ground. At another time, when I was stationed at Fort Peddie, and the country was suffering from the effects of a long drought and was overrun with unusual quantities of ants and grasshoppers, we were visited by thousands of these birds, which remained many days devouring these pests. Though the locust-birds are excellent eating, no one ever thinks of destroying them, and they were so fearless that, though I often rode or ran amongst them to test their tameness, only a few in my immediate vicinity would rise, the rest continuing to feed; but every ten minutes or so the whole mass would rise of their own accord and fly, first a few yards to the right, and then to the left, in a slanting direction, presenting alternately a black and white wave of birds some miles in length, a sight never to be forgotten by the spectator."

I do not possess the eggs of this Pratincole, which are said to resemble closely those of *G. pratincola.*

The specimen figured in the foreground, to the right, on the same Plate with *Glareola pratincola*, is a bird of the year, obtained in Turkey, and now in my collection, it being also the specimen described. In the background, to the right, I have figured a bird with uplifted wings, to show the black axillaries. The old bird is not figured, as, excepting for its black axillaries and wing-coverts, it so nearly resembles the adult of *G. pratincola.*

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *juv.* Haskeuy, Turkey, October 19th, 1871 (*T. Robson*). *b*, *juv.* Scutari, Turkey, September 13th, 1868 (*T. Robson*). *c*, ♂ *ad.* Djeddah, Red Sea (*S. Stafford Allen*). *d*, ♂. Cape of Good Hope (*E. L. Layard*).

*E Mus. Howard Saunders.*

*a*, ♂. South Russia (*H. F. Möschler*).

## Family CHARADRIIDÆ.

### Genus CURSORIUS.

*Charadrius* apud Gmelin, Syst. Nat. i. p. 692 (1788).
*Cursorius*, Latham, Ind. Orn. ii. p. 751 (1790).
*Tachydromus* apud Illiger, Prodromus, p. 250 (1811).
*Cursor* apud Wagler, Syst. Av. (1827).

This genus is represented in the Palæarctic, Oriental, and Ethiopian Regions, one species occurring in the Western Palæarctic Region, though only as a straggler north of the Mediterranean.

Coursers frequent large sandy plains and such places generally as are far from water and almost bare of vegetation. They are usually to be met with in small family parties; and when disturbed they either squat close to the ground or else seek safety by running with extreme rapidity, preferring to escape thus rather than to take wing, though they fly tolerably well. They feed on insects of various kinds, chiefly coleoptera and various kinds of grasshoppers; and their alarm-note is said to closely resemble the call of the Plovers. They deposit their eggs on the ground, making no nest; these are usually two or three in number, and are short and stout in shape, dull stone-buff in colour, marbled and spotted with pale purplish grey and dull reddish brown.

*Cursorius gallicus*, the type of the genus, has the bill about as long as or a trifle shorter than the head, slender, slightly curved, tapering, straight to the end of the nasal sinus, then decurved to the tip, which is narrow, rounded, and sharp-edged; nostrils lateral, oval, placed in the fore part of the nasal sinus; wings long, rather pointed, the first and third quills about equal, the second slightly longer, being the longest; tail moderate, slightly rounded; legs long and slender; tibia bare for about a third of its length, scutellate; tarsus slender, compressed, scutellate; hind toe wanting, the anterior toes short, stout, the middle and outer toes connected by a membrane, the centre toe much longer than the two lateral ones, the inner one much shorter than the outer one; claws small, slender, slightly curved, acute, that on the middle toe with a dilated inner edge.



CREAM-COLOURED COURSER.
CURSORIUS GALLICUS.

# CURSORIUS GALLICUS.

(CREAM-COLOURED COURSER.)

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*Le Cour-vite*, Buff. Hist. Nat. Ois. viii. p. 128 (1781).
*Charadrius gallicus*, Gm. Syst. Nat. i. p. 692 (1788).
*Cursorius europæus*, Lath. Ind. Orn. ii. p. 751 (1790).
*Charadrius corrira*, Bonnat. Tabl. Encycl. p. 23 (1791).
*Cursorius isabellinus*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 328 (1810).
*Tachydromus*, Illig. (*Ch. gallicus*, Gm.) Prodr. p. 250 (1811).
*Tachydromus europæus* (Lath.), Vieill. Nouv. Dict. viii. p. 293 (1817).
*Cursor isabellinus* (Meyer), Wagler, Syst. Av. Gen. *Cursor*, sp. 1 (1827).
*Cursorius gallicus* (Gm.), Bp. Icon. Faun. Ital. Ucc. Introd. (1832).
*Cursor europæus* (Lath.), Naum. Vög. Deutschl. vii. p. 77 (1834).
*Tachydromus gallicus* (Gm.), Licht. Nomencl. Av. p. 94 (1854).
*Cursorius pallidus*, C. L. Brehm, Vogelfang, p. 279 (1855).
*Cursorius brachydactylus*, C. L. Brehm, op. cit. p. 279 (1855).
*Cursorius jamesoni*, Jerd. B. of India, ii. p. 875 (1863).

*Cour-vite isabelle*, French; *Corrione biondo*, Italian; *Pluviera ta l'Inghilterra*, Maltese; *Keruan djebeli*, Arabic; *Engaño-muchacho*, in the Canaries; *europäische Rennvogel*, German.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 795; Werner, Atlas, *Coureurs*, pl. 5; Naumann, Vög. Deutschl. taf. 171; Gould, B. of Eur. pl. 266; id. B. of G. Brit. iv. pl. 44; Roux, Orn. Prov. pl. 269.

*Ad.* rufo-isabellinus, subtùs dilutior: abdomine imo fere albo: fronte magis rufescente: sincipite postico nuchâque cærulescenti-cinereis: striâ conspicuè albâ pone oculos in cervice confluente utrinque nigro marginatâ: remigibus primariis et tectricibus primariorum nigris, illis vix brunnescente isabellino apicatis, secundariis externis in pogonio externo isabellinis et in pogonio interno nigricantibus et albo apicatis, intimis dorso concoloribus: caudâ isabellinâ, rectricibus centralibus rufescente tinctis, reliquis maculâ subapicali nigricante notatis et ad apicem fere albis: hypochondriis nigricante lavatis, subalaribus et axillaribus nigris: rostro nigricanti-corneo, ad basin mandibulæ albo: pedibus lividè griseis, iride fuscâ.

*Juv.* pallidior, nuchâ vix cinereo lavato, capite fuscescente striolato, striâ superciliari isabellino-albidâ: corpore suprà fasciis lunatis obsoletè fuscescentibus notato: remigibus primariis versus apicem isabellino marginatis: gutture et pectore vix pallidè fusco guttatis.

*Adult Male* (Gozo, 27th March). Forehead rufous sand-colour, gradually becoming grey towards the hind crown, which, with the nape, is ashy blue-grey; a broad white streak passes on each side from above

the eye to the nape, where they join; this line is bordered below from the eye by a black stripe; and on the nape there is a similar border above; entire upper parts, including the wing-coverts and inner secondaries, rufescent isabelline; primaries and primary-coverts black, the former slightly tipped with brownish isabelline; outer secondaries blackish on the inner web, isabelline on the outer web, and tipped with white; tail isabelline, the central rectrices rufescent isabelline, the remainder with a subterminal blackish patch, and fading almost into white at the tip; underparts isabelline, with a greyish tinge on the breast, and becoming creamy white on the lower abdomen, lower flanks washed with sooty black; axillaries and under surface of the wing black; beak dark horn, light greyish at the base of the lower mandible; legs greyish; iris dark brown. Total length about 9·5 inches, culmen 1·2, wing 6·05, tail 2·62, tarsus 2·15.

*Female.* Similar to the male.

*Young* (Algeria). Upper parts duller than in the adult; crown rufous isabelline, tinged with blue-grey on the nape, and marked with semicircular blackish lines, but lacking the characteristic black, white, and blue-grey markings of the adult; a whitish isabelline line passes over the eye; and the sides of the head are pale isabelline, with a few dark markings; upper parts marked with irregular crescentic dark lines; wings and tail as in the adult, but the primaries are on the terminal portion margined with isabelline; underparts pale isabelline, on the throat and breast marked with small brownish spots.

The present species inhabits the sandy desert plains of North Africa and Western Asia, being elsewhere met with only as a rare straggler. It is somewhat remarkable that it should have occurred so frequently in Great Britain; for Mr. Harting gives in all sixteen instances of its having been obtained, besides mentioning others where it was only seen. The first instance on record appears to be that mentioned by Latham of one shot near Wingham, in Kent, in 1787; a second specimen is said by Fleming to have been obtained in North Wales in 1793; a third was shot near Wetherby, in Yorkshire, in April 1816; a fourth was, as stated by Mr. Fox, obtained in October 1827 in Charnwood Forest, Leicestershire; and a fifth was shot by Mr. W. Langton on East Down, Salisbury Plain, in October 1855. These five occurrences are all that were enumerated by Yarrell in his third edition; but to these may be added the following occurrences recorded previous to 1856, viz.:—one, Yorkshire, 1825 (*Gould*); one in the collection of the late Mr. Hoy, obtained near Aldeburgh, Suffolk, in October 1828; and one, Cheswick, Northumberland, November 1846, in the collection of Mr. Brodrick. The remaining instances, enumerated by Mr. Harting, are as follows:—two seen, one shot, Braunton Burrows, North Devon, October 1856 (*Mathew*, Zool. 1857, p. 5346); one, Hackney Marshes, Middlesex, 19th October, 1858 (*Newman*, Zool. 1858, p. 6309); one, Somerset (*Rowe*, List Birds Devon, p. 32); one, Allonby, near Maryport, Cumberland, October 1864 (*Allis*, Zool. 1865, p. 9418); one, Sandwich, Kent, October 1866 (*Harding*, Zool. 1866, p. 523); one, Cleghorn, near Lanark, October 1868 (*Walker*, Zool. 1868, p. 1459); one, Christchurch, Hants (*Gurney*, Zool. 1869, p. 1512); and one near Low Lynn, Northumberland, November 1870 (*Gurney*, Zool. 1871, pp. 2522, 2562). On the continent of Europe it is a rare straggler, excepting in the extreme south. It has not been obtained in Scandinavia, and has, according to Borggreve, only twice been recorded from North Germany, once from near Darmstadt, and once from Mecklenburg; but, according to Dr. Bruch, another example is in the collection at Wiesbaden, which was obtained near Eltfeld about the

year 1842; and he adds (J. f. O. 1854, p. 277) that both he and others observed this species *on several occasions*, on the left shore of the Rhine, near Eltfeld; but as he remarks that they pursued their prey uttering loud cries, Von Heuglin seems to doubt his statement; for he says the Courser is a peculiarly silent bird. A specimen is also recorded by Von Heuglin (J. f. O. 1869, p. 256) as having been killed near Ravensburg, in Suabia, on the 8th October, 1869; and he says it is now in the Museum at Stuttgart.

I have no information as to the occurrence of the present species in Belgium; but Mr. Labouchere informs me one has been shot in Holland, near Amsterdam. In France, Messrs. Degland and Gerbe write (Orn. Eur. ii. p. 119), "it has been seen and killed in the neighbourhood of Paris, Dunkerque, Saint-Omer, Calais, Abbeville, Amiens, Dieppe, Fécamp, and Metz;" and it has occurred in the south of France, near Montpellier and Nîmes. Professor Barboza du Bocage includes it his list of the birds of Portugal with a query, and Colonel Irby did not meet with it in Spain; but Mr. Howard Saunders informs me that it was accidentally omitted from his list published in 'The Ibis,' 1870, and that he knows of at least two specimens having been obtained near Malaga; it is, however, only an irregular visitant. In Italy it has occurred at irregular intervals, during passage, in different parts of the country, and in Sicily it is said to be met with, especially near Terranova and Girgenti; but it does not appear to have occurred in Sardinia. It is found at Malta; but Mr. C. A. Wright says (Ibis, 1864, p. 140), "it is rare, although few years pass without some being taken. I have seen specimens shot in March, April, and May. It is said to appear also in July, August, and September." I find no record of its occurrence in Greece or Turkey; but Professor von Nordmann states that it occurs in Southern Russia, though rarely, and has been obtained in the Government of Ekaterinoslaf. He saw a flock of six or eight individuals in Abasia in May 1836. It does not appear to be recorded from Asia Minor; but Canon Tristram says (Ibis, 1868, p. 322) that he occasionally met with it on the coast of Palestine. In the deserts of North Africa it is resident, but, so far as I can ascertain, it cannot be considered numerous in any locality. Captain Shelley writes (B. of Egypt, p. 229) as follows:—"This species, although a resident, is not very abundant in either Egypt or Nubia. It is a desert-bird, preferring the sandy wastes to the more cultivated parts, and is generally to be met with in small flocks, probably consisting of the last year's brood. I myself only found it on one occasion, on the 4th of February, opposite Aboo-fayda, where I had a most exciting chase, as I had recognized the birds and was anxious to procure a specimen. They were four in number, and very shy; they, however, preferred running to flying, never remaining long on the wing. Finding that I could not stalk them in the ordinary way, I drove them towards a bush, and then making a long round, got up to that piece of covert and shot one and broke the leg of a second. This wounded bird detained the other two, and enabled me to procure one of them. The wounded one was now alone, and so shy that I had great difficulty in procuring it, which I finally succeeded in doing by walking on one side instead of directly towards it, when it crouched on the sand, hoping to be passed unobserved; and thus after an hour's pursuit, I obtained my third specimen." Von Heuglin remarks that in North-east Africa it is certainly a resident, and never migrates. He met with it in Arabia Petræa, on the coasts of the Red Sea, in Egypt, Nubia, and in North-eastern Kordofan. Rüppell says that it is numerous in Abyssinia, which statement Von Heuglin doubts, and says that no one acquainted with its habits would look for it

there. In North-western Africa it is stated to be a partial migrant. Loche says that it is only met with in the extreme south of Algeria; and Canon Tristram, who met with it in the Sahara, remarks (Ibis, 1860, p. 79) that, from the small number he observed in winter, he believes that even in the southern desert the greater portion migrate. Mr. O. Salvin writes (Ibis, 1859, p. 354) as follows:—"It was not until the end of June that I met with this bird. We had just broken up our final camp at Zana and were returning by way of the Caravanserai of Aïn Yacoute to Constantine, when, a short distance from the former place, we encountered a small flock in one of the undulating and sterile plains through which the high road to Batna and Biskra runs. The birds showed little symptoms of fear, and ran before our horses, or flew round our heads. At the time we thought they were not breeding there; but, as they were all in full adult plumage, I have since considered that they were there for no other purpose. The fact was, our faces were set homewards, and it was difficult to stop, even for the eggs of the Cream-coloured Courser." According to Colonel Irby (Orn. Str. Gibr. p. 155), Favier says that the present species "appears annually during July in some numbers on the plains of Sharf el Akab, not very far from Tangier. Their stay there and their numbers vary according to the abundance or scarcity of insects, and also with the temperature; for unless the latter is favourable, they are rarely met with, and none were seen during the year 1854. They leave these plains in August or the first part of September. Early in summer they ought to be found nesting near Sharf el Akab, as in May 1847 a male was brought to me by a chasseur, who rescued it from a Falcon which had struck it down." It is also met with in the Canaries, where, Dr. Carl Bolle states (J. f. O. 1857, p. 335), it is tolerably common in the south-eastern portion of Gran Canaria, and is numerous in the bare plains between Juan grande and Aguimes and thence to Telde. In the vicinity of the Grando he saw parties of five and six individuals; and there they were quite numerous; but in June he only once observed it between Aguimes and Valesquillo. He also met with it at Lanzarote and in the vicinity of Olivia, in Northern Fuerteventura, in which latter place it was common.

To the eastward the present species ranges as far as the desert portion of North-western India. De Filippi obtained it on the plain of Sainkalé; and Mr. Blanford, who obtained specimens at Sáadatabád, in Persia, and at Gwádar, in Baluchistan, says that, though not common, it was noticed now and then throughout the country. Mr. Hume writes (Stray Feathers, i. p. 228) that it was met with, though sparingly, in Sindh, in all suitable localities—sandy wastes, especially in the neighbourhood of cultivation. They are permanent residents and breed in Sindh, as they do in suitable localities in the northern and western districts of the Punjab, and almost throughout Rajpootana. Mr. Adam also, in his notes on the birds of the Sambhur Lake, writes that "it is very abundant all over the sandy plains during the cold weather. On the approach of the hot weather it disappears, and, I believe, goes further west or north to breed. I have sent three parties in three different years to obtain the eggs, but have never succeeded. There is a great difference in the colour of the birds; some are very pale, while others are very deeply coloured. Mr. Hume has obtained large numbers of the eggs from the Sirsa district, where *C. coromandelicus* is unknown." It does not appear to occur further to the eastward than above recorded; for Severtzoff did not meet with it in Turkestan, where so many desert-birds occur.

Dr. Jerdon thought that probably the Asiatic form of the present species was different from our European bird, and he gave it the provisional name of *Cursorius jamesoni*. I do not possess any Asiatic examples, and am therefore indebted to Lord Walden and Mr. J. E. Harting for the loan of specimens for comparison; and after having most carefully examined these, I am enabled to say that there is no difference either in size or coloration.

The Cream-coloured Courser is said by those who have had an opportunity of observing it in a wild state to be a true desert-bird, and to be to a certain extent local in its distribution, even in the desert. Von Heuglin says that it may be met with at the base of sand-hills where there is a little desert-grass, on poor pastures, in low places where there are remains of old canals, in dunes overgrown with *Statice* and *Salsola*, or even with acacias and scattered dates, or in bare places in the bush-covered steppes, or in deserted fields where maize or cotton has been planted; but he never saw it far from water or in hot sand-plains perfectly bare of vegetation. Dr. Carl Bolle, however, writes (*l. c.*) that in Canaria he found it most numerous in the bare sun-scorched plains.

Von Heuglin always met with it in pairs or in small family parties, and says that they always appear to move about very swiftly, so much so that the eye can scarcely follow them, and every now and again stop suddenly and jerk their head, or move their body quickly, and run off again swiftly in another direction. Before taking wing they run a short distance, and seldom fly far or high, preferring to trust to their swiftness of foot for safety. Some very interesting notes of Mr. Favier's on the habits of the Courser, especially in confinement, are published (*l. c.*) by Colonel Irby, which I transcribe as follows:—"Their food is entirely insects or larvæ, particularly *Pentatoma torquata*, and different sorts of grasshoppers. They are met with in small lots, usually frequenting dry arid plains, where they spread out in all directions, running about after insects, and are very wary and difficult to get a shot at. Their cry of alarm is much like that of the Plover. They rest and sleep in a sitting position, with their legs doubled up under them. Should they not fly away when approached, they run off with astonishing swiftness, manœuvring to get out of sight behind stones or clods of earth; then, kneeling down and stretching the body and head flat on the ground, they endeavour to make themselves invisible, though all the time their eyes are fixed on the object which disturbs them, and they keep on the alert ready to rush off again if one continues to approach them.

"The age of the young birds can be well made out by the zigzag markings with which the plumage is speckled, which becomes clearer each moult till the end of the second year, when they assume the regular adult livery. There is no difference at any age in the plumage of the sexes.

"In 1849 they did not leave till the 11th September, when a chasseur brought me one slightly wounded in the wing. I tried to keep this bird alive; but it died directly the weather became cold. It proved on dissection to be a female; and from the large size of the eggs in the ovary it appeared as if it would soon have nested, probably in October or November, when doubtless they retire to a much warmer climate.

"Towards the end of August 1851, two others were brought to me, both slightly wounded—one an adult, the other an immature bird. To prevent the birds this time from dying of cold I placed them by day in a room where there was always a fire kept up. At night I put them in

a box, making a door at the side, lining the top and sides with cotton-wool, placing sand an inch deep on the bottom; this was warmed and dried by putting a charcoal brazier inside during the day. I fed the birds on grasshoppers till November, when these insects became very scarce, and, as each bird ate fifty daily, it was necessary to change their diet to the larvæ of coleoptera, which, after some reluctance, they began to take. This food suited them better than grasshoppers, the birds becoming fatter, at the same time eating less. They did well till January, when, the adult bird pining and refusing food, I tried to save it by cramming; but this was useless, as it died in February, and on dissection I found that death was caused by a very large tumour in the stomach. It proved to be a female; and from the ovaries it appeared the season for laying had passed.

"The surviving bird continued well till the end of January; then, appearing ill, I fed it by hand till April, when, as the weather became warmer, it grew more healthy. I then shut it up in a cage with a White Turtle Dove. The Courser was the stronger bird, and did little else than play with the Dove; but they lived in perfect harmony. In May sexual desire was shown in a very marked manner; but unluckily the Dove was also a female. During the exhibition of this passion the Courser used to make a noise which may be expressed thus, '*rererer*.'

"This continued till the middle of June, then entirely ceasing till the next year (1853), when it resulted in the Courser laying eight eggs—the first on the 15th, the second on the 16th, the third on the 30th May, the fourth on the 1st, the fifth on the 11th, the sixth on the 14th, the seventh on the 23rd, and the eighth on the 25th of June. In 1854 she laid again, with the same irregularity, twelve eggs—the first on the 17th of May, the last on the 28th of July. Though in perfect health, treated and fed in the same way, she did not lay in 1855, but in 1856 laid two eggs on the 6th and 7th of July. In 1857 she again, at irregular intervals, laid ten more eggs—the first in May, the last in July. In 1858 none were laid. In 1859 she produced four more eggs—the first two on the 6th and 7th of July, the others on the 9th and 10th of August.

"Shortly afterwards this bird, in perfect health, plumage, and vigour, was lost to ornithology, owing to the war between Spain and Morocco; for on the 25th of October I was ordered, with other French subjects, to embark in the French war-steamer 'Mouette,' and not knowing when I should return, and still less how to take care of my bird, I made up my mind to let it go; but it was so tame that it either would not or could not use its wings; so, in my dilemma, I gave it in charge of a Moor during my absence; but, unfortunately, on my return in April 1860 I found it had died." In Egypt, Von Heuglin writes, the breeding-season must be in March and April; for in May one sees young birds wandering about.

The egg of this species was first known through Canon Tristram, whose notes were published by Mr. Hewitson (Ibis, 1859, p. 79), who also figured the egg (pl. ii. fig. 3). These notes are as follows:—"Although during the winter 1856–57 I penetrated several hundred miles into the Algerian Sahara, and beyond its limits as far as between latitudes 31° and 30°, yet this bird only once came under my observation, being evidently for the most part only a summer migrant to those regions. In the month of June 1857 I twice met with small flocks of them on the Hauts Plateaux between Biskra and Batna, to the south of Constantine. During the previous summer of 1856 I had met with the bird several times in the western Sahara, north of Laghouat, and

especially in the neighbourhood of Ain Oosera, a solitary caravansary in the desert, kept up by the French government as a military halting-place.

"Though certain that the birds were breeding there at the time, I was unable to detect their nest; but shortly after my departure the keeper of the caravansary, who had assisted me in my search, and who had in previous years frequently taken the eggs and cooked them as omelets along with those of the *Pterocles setarius*, found the nest and sent me the eggs, three in number. According to his account, the Courser always adheres to this number, as indeed might have been expected from the character of the bird.

"It makes no nest whatever, but deposits its eggs on the bare soil in the most arid plains."

Favier believes that only two eggs are deposited; and Viera also says (*fide* Bolle, J. f. O. 1857, p. 336) that the Courser "nests on the ground, merely scratching a hole which it surrounds with small stones, and deposits *two* eggs, rather smaller than those of a Pigeon, whitish in colour, and marked with dark spots."

As this article was going to press, Mr. J. H. Gurney, jun., who has just returned from Egypt, informs me that a specimen he shot at Gar had been feeding on white grubs about $1\frac{1}{4}$ inch long. He says that he found it rare and extremely shy in North-east Africa.

I possess a single egg, one of those sent to England by Favier, which agrees closely with the specimen figured by Mr. Hewitson, being in ground-colour stone-buff or dull stone-ochre, closely spotted or almost marbled with pale purplish grey underlying shell-markings and pale dull reddish brown surface-spots or small blotches. In shape this egg is rather short and stout, tapering towards the smaller end; in size it measures $1\frac{15}{40}$ by $1\frac{3}{40}$ inch.

The specimens described and figured are an adult male from Gozo, and a young bird from Algeria, both being in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Gozo, March 27th, 1866 (*C. A. Wright*). *b*, *juv.* Algeria (*E. C. Taylor*).

*E Mus. Lord Walden.*

*a*. Morocco. *b*, ♀. Sambhur, India, November 30th, 1870 (*R. M. Adam*). *c*, ♀. Sambhur, February 13th, 1871 (*R. M. Adam*).

*E Mus. J. E. Harting.*

*a*, ♀. Sicily (*Parzudaki*). *b*, ♂. Tangier (*Olcese*). *c*, *juv.* Algiers (*Parzudaki*). *d*. Upper Egypt, December (*S. Stafford Allen*). *e*. N.W. Provinces, India (*Blanford*). *f*, ♀. Koochawan, India (*A. O. Hume*). *g*, ♂. N.W. Provinces, India, February 19th, 1869 (*A. O. Hume*). *h*, ♀. Near Sambhur, India, December 4th, 1869 (*A. O. Hume*).

*E Mus. Howard Saunders.*

*a*, *b*, ♂. Tangier, autumn (*Olcese*).

## Genus CHARADRIUS.

*Pluvialis* apud Brisson, Orn. v. p. 42 (1760).
*Charadrius*, Linnæus, Syst. Nat. i. p. 254 (1766).

The Golden Plovers form a small genus which is represented in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, two species being found in the Western Palæarctic Region, one being a resident, whereas the other is merely a straggler from the Eastern Palæarctic Region.

These Plovers frequent open grassy places, and even dry sandy localities, as well as the shores of lagoons and lakes and the sea-shore; indeed they are more frequently seen in the uplands and on inland moors than elsewhere. Except during the breeding-season, they are gregarious, and often collect in large flocks. They are migrants in most countries which they inhabit, leaving their breeding-haunts in the autumn for southern climes or else for the sea-shore. They walk and run with ease and swiftness, and are strong and active on the wing. They feed on insects of various kinds, and are to a large extent nocturnal feeders. Their call-note is loud and clear, and is more frequently uttered when the bird is on the wing. They breed in the uplands, their nests being mere hollows in the moss or grass scantily lined with a few dry stalks, and deposit four eggs, which are pyriform in shape and pale greenish ochreous in colour, spotted and blotched with dark brown and pale purplish brown.

*Charadrius pluvialis*, the type of the genus, has the bill shorter than the head, straight, rather slender, the upper mandible straight to the end of the nasal sinus, and then slightly raised, and decurved to the tip, which is narrow but rather obtuse; gape-line straight; nasal sinus long and wide; nostrils small, linear, subbasal; wings long, pointed, the first quill longest; tail moderate, even; legs moderately long, slender, the tibia bare for a short space; tarsus covered anteriorly and laterally with small hexagonal scales; toes three in number, moderate or rather short, the second and third connected by a web at the base; claws short, rather feeble, slightly arched, obtuse, that on the middle toe with the inner edge dilated.



GOLDEN PLOVER
CHARADRIUS PLUVIALIS.



GREY PLOVER
SQUATAROLA HELVETICA.

# CHARADRIUS PLUVIALIS.

(GOLDEN PLOVER.)

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*Charadrius pluvialis*, Linn. Syst. Nat. i. p. 254 (1766).
*Charadrius aureus*, P. L. S. Müll. Syst. Nat. Suppl. p. 118 (1776).
*Charadrius auratus*, Suckow, Naturg. der Thiere, ii. p. 1592 (1801).
*Charadrius apricarius*, Brehm, Vög. Deutschl. p. 542 (1831).
*Charadrius altifrons*, Brehm, Vög. Deutschl. p. 542 (1831).
*Pluvialis apricarius*, Bonap. Cat. Met. Ucc. Eur. p. 57 (1842).
*Pluvialis aurea*, Macgill. Hist. Brit. B. iv. p. 94 (1852).

*Golden Plover*, *Green Plover*, *Yellow Plover*, *Whistling Plover*, *Grey Plover*, English; *Feadag*, Gaelic; *Pluvier doré*, French; *Chorlito*, Spanish; *Tarambola*, Portuguese; *Pluviera*, Maltese; *Gold-Regenpfeifer*, German; *de Goud Plevier*, Dutch; *Hjeile*, *Brokfugl*, Danish; *Ljung-pipare*, Swedish; *Brokfugl Hejlo*, Norwegian; *Rjanka Sivka*, Russian.

*Figuræ notabiles.*

Gould, B. of Eur. iv. pl. 294; Yarr. Brit. B. ii. p. 385; Naum. Vög. Deutschl. vii. Taf. 173; Kjærb. Orn. Dan. Afb. xx. fig. 6; Schl. Vog. Nederl. pl. 211; Sundev. Svensk. Fogl. pl. xxxvi. figs. 2, 3; Fritsch, Vög. Eur. Taf. xxxvii. figs. 1, 2; Gould, B. of Gt. Brit. part 5.

♂ *æstiv.* suprà nigricans, ubique aurato et albido notatus: tectricibus alarum fuscescenti-brunneis, sparsiùs aurato maculatis, et majoribus extùs albido maculatis: primariarum tectricibus fuscis albo terminatis: remigibus fuscis, scapis medialiter albis, primariis interioribus ad basin externam albis, secundariis extùs aurato et albo transmaculatis: tectricibus supracaudalibus aurato transfasciatis: caudâ saturatè fuscâ, aurato et albo irregulariter transnotatâ: fronte, maculâ infraoculari, supercilio lato per colli latera, et corporis lateribus totis, albis, hypochondriis fusco variis: facie et corpore subtùs nigerrimis: pectoris superioris lateribus aurato variis: subcaudalibus lateralibus albis, mediis nigris: subalaribus albis fusco maculatis: plumis axillaribus albis: rostro nigro: pedibus cinereis: iride nigricanti-brunneâ.

♀ *æstiv.* mari similis, sed nigredine pectoris paullulùm brunneo mixtâ.

♂ *hiem.* similis ptilosi æstivæ, sed obscurior et subtùs albescens, pectore superiore fusco.

*Adult male in summer plumage.* Upper surface of the body black, spotted all over with golden and white, but the latter in a less degree, the nape rather paler and less varied with black; wing-coverts dusky brown, sparingly spotted with golden and white, the greater coverts more conspicuously notched with white, the primary coverts dusky brown with white tips; quills dusky brown, the shafts white in the middle, with a patch of white also visible at the outer base of the lesser primaries, the secondaries black, marked with oblique golden bars; upper tail-coverts black, irregularly barred across with golden; tail

blackish, with transverse markings of whitish, and a slight tinge of golden here and there; sides of the face, throat, breast (narrowing on the upper part), and belly black; forehead, a spot below the eye, eyebrow, extending down the sides of the neck and bordering the black chest right down to its extremity, white; the sides of the upper part of the breast black, varied with golden; flanks slightly mottled with dusky; centre of the under tail-coverts black, the sides white; under wing-coverts white, marked with dusky brown on the edge of the wing; axillary plumes pure white; bill black; feet bluish grey; iris dark brown. Total length 7·8 inches, culmen 1·0, wing 7·1, tail 3·4, tarsus 1·6.

*Adult female.* Similar to the male, but has the black breast somewhat tinged with brown.

*Male in winter plumage.* Upper surface of the body black, mottled with golden exactly as in summer; forehead buffy white; eyebrow whitish, distinctly washed with golden, and minutely spotted with dusky brown; cheeks whitish, washed with golden, and more plainly spotted with dusky brown; feathers round the eye white; throat and lower breast and abdomen pure white; chest and sides of the body mottled with greyish brown, and distinctly washed with golden; under tail-coverts white in the centre, the outermost mottled with dusky brown and washed with golden; under wing-coverts white, thinly marked with greyish brown; axillary plumes pure white.

*Obs.* Specimens vary very much in the amount of golden colour which they have in the winter plumage, some of them being very much brighter than others; and the amount of dusky brown on the breast is also a character which varies a great deal.

*Nestling.* Bright golden, varied with black on the head and back, the hind part of the neck bright yellow; a spot under the eye and under surface of the body pure white.

*Explanation of the Plate.* The two right-hand figures in the Plate illustrating the winter plumage, represent the Golden Plover, the flying bird showing the white axillaries.

The present species may always be distinguished from the American and Asiatic Golden Plover by its pure-white axillaries; for we have no hesitation in declaring that these three birds constitute excellent species.

Dr. Finsch writes to us that *Charadrius fulvus*, Gm., is certainly different from *C. pluvialis*, and a perfectly good species. He adds:—"I give a diagnosis of the two species in my 'Vögel Centr. Polynes.' p. 194, and have found it always confirmed, although of the numerous specimens that have passed through my hands I have never left one unexamined; and I always find the tibia less feathered, and the axillaries brownish grey, instead of white. I have not seen enough of *Charadrius virginianus*, Borkh. As in *C. fulvus*, the axillaries are brownish grey; but the wings seem longer, as long as in *C. pluvialis*. Should this be constant in a large series, I should call *C. virginianus* a good species." Herr von Pelzeln, however, considers that all the Golden Plovers belong to the same species, and writes to us as follows:—"In my opinion *Charadrius pluvialis* (*Pluvialis apricarius*), *Charadrius longipes* (*Pluvialis fulvus*), and *Charadrius virginicus* (*Pluvialis fulvus americanus*, Schleg.) all belong to the same species; and I almost doubt if they can even be divided into races. I send you herewith particulars of the localities whence those in the Imperial Vienna Museum are, and give the lengths of tarsus, as they vary most in this respect.

"Specimens with the tarsus 18‴ are from Austria, Germany, and Greenland; tarsus 18½‴ from England, Hungary, East Indies, and Brazil (*J. Natterer*); tarsus 19‴ from Madras (*Novara*

*Expedition*), South India (*Dr. Sclater*), Ceylon (*Baron Hügel*), Nicobar (*Novara Exp.*), S.-W. Formosa (*Swinhoe*), Banka and Ternate (*Leyden Museum*), Norfolk Island (*Bauer*), Brazil (*Natterer*); tarsus 20‴ from N. Formosa (*Swinhoe*), Celebes, Stewart Island (*Novara Exp.*); tarsus 21‴, one specimen from Tahiti (*Novara Exp.*)." As we give in the account of *C. fulvus* some critical remarks on the distinctions between this species and its American congener, we need not refer to the subject further in the present article.

Dr. Reinhardt says that *C. pluvialis* does not occur in Greenland, but that *C. virginicus* takes its place; but Dr. Finsch informs us that he has reasons for knowing *C. pluvialis* breeds in East Greenland. It is very common in Iceland—and is also plentiful in the Faroes, where the late Mr. Wolley found it breeding. In Great Britain, Mr. A. G. More writes, it is "far more abundant in the north, and especially in Scotland, but breeds in small numbers in Devon and Somerset, in Pembroke (*Mr. Tracy*), and doubtless in North Wales, though I have no authority for subprovince 18. Mr. Eyton writes that the Golden Plover is said to breed in the mountains above Chirk Castle; and Mr. O. Salvin has found the nest in Derbyshire. The bird becomes more numerous on the moors from Yorkshire northwards, and is especially well known on all the Highland mountains." Messrs. Gray and Anderson state that it is very abundant in Scotland, and resident all the year, frequenting the moors in summer during the breeding-season, and the sea-shore at low tide in winter. In Cornwall, Mr. Rodd says that it is "generally distributed in the winter months over the open heaths and moors, receives large accessions after severe frosts, when the fallow fields are visited by them; sometimes observed in March with the black breast and belly partially developed." In speaking of Ireland, Mr. Thompson says that it is common, breeding in the least-frequented bogs throughout that country.

Kjærbölling remarks that it is "common in Denmark, breeding there. They arrive in March, and leave in September and October;" and Mr. R. Collett, writing from Christiania, observes that in the interior and south-eastern part of the country it is found breeding only in the willow region on the Fells, and is only seen in the lower portion during migration. Messrs. F. and P. Godman, whose stay at Bodö gave them such opportunities of observation, informs us that "The Golden Plover first appeared on May 1st, when we saw a small flock on the sea-shore in almost full summer plumage. It snowed the whole of the next day, and we saw none for ten days. After this date they were extremely plentiful in the marsh for a short time, when they again disappeared. Throughout the summer a few birds were occasionally to be seen. They probably bred on some of the neighbouring mountains." Herr A. von Homeyer says that it winters in Pomerania almost every year in places not far from the sea. He saw a flock of eight at Görlitz, in December 1867. Mr. H. M. Labouchere writes to us as follows:—"This bird breeds on the moors in the southern provinces of Holland, but also visits the other provinces during its autumnal migration." Belgium, says De Selys-Longchamps, it passes regularly in autumn, and again in March or April. De la Fontaine states that in Luxembourg a few remain to breed, and take up their quarters in the marshes of the Ardennes. Krœner says that it appears accidentally in Alsace in winter.

Degland and Gerbe give the following note:—"Passes regularly through France. In the south its passage in spring commences from the early part of March, and extends into April. The autumnal migration takes place in October and November. Some remain in the north of

France until the first frosts, and even stay with us during mild winters." Bailly writes:—"This species appears periodically in Switzerland and Savoy, in larger or smaller bands. They remain from October to November, when the cold drives them southward. A few remain during mild winters. They return at the end of February, March, and April, and pass on northward to breed."

Major Irby tells us that in Southern Spain it is an autumnal migrant in great quantities, and was first seen by him on the 1st of November. Mr. Howard Saunders sends us a note to the effect that considerable flocks are to be found in Southern Spain throughout the winter and early spring, when they retire to their northern breeding-grounds. In Portugal it is also very common in winter. Regarding its occurrence in Malta, Mr. C. A. Wright has written as follows:—"Taken in considerable numbers, and sold at the poulterers' in November, a few generally arriving in October. Appear again in March, but in much more restricted numbers. A few are seen in December and January. The only one I ever saw in summer plumage was shot in May 1861; it was very small, and in exceedingly bad condition." Mr. C. F. Tyrwhitt Drake found it common in Tangier and Eastern Morocco; and Loche calls it "a migrant which appears in Algeria about the end of the autumn and during the month of February." Mr. Osbert Salvin "several times saw flocks of Golden Plover near the city of Tunis in February and the beginning of March." E. Vernon Harcourt includes it in a list of stragglers found in Madeira. Dr. Giglioli records it as "extremely common near Pisa, but only in the winter;" and Malherbe states that it "winters in Sicily, migrating in spring, and is rarely seen after getting its summer plumage." Lord Lilford says it is "common in severe weather in Corfu and Epirus;" and as regards Greece, Lindermayer observes that it "comes early in the autumn, and remains a few weeks, only a few wintering with us." Captain Sperling gives the following note:—"I have never observed these birds in the Mediterranean during the summer. I extract the following from my notes:—'November 22nd, 1862. Hiding for Duck in the Missolonghi marshes, Grey and Golden Plover and Lapwing arriving in abundance at 11 o'clock at night, soaring and whistling over my head. This is the first time that I have noticed them in any quantities.'" Messrs Elwes and Buckley state that it is "common in Macedonia, and found occasionally both in Epirus and the east of Turkey;" and Mr. Robson tells us that, like the Grey Plover, it is plentiful in Turkey and Asia Minor in winter. In Southern Russia, as stated by Professor von Nordmann, the Golden Plover arrives in March; and on the return journey, in October and November, flocks visit the steppes on the borders of the Black Sea. A few remain over the winter. Ménétriés says it is common in the Caucasus. Mr. Keith Abbott procured it in the neighbourhood of Trebizond; and Messrs. Dickson and Ross write from Erzeroom, "Shot on the 17th November, 1843. Said to be common on the shore to the westward of the town." The Golden Plover has also been set down as an inhabitant of Siberia and other countries to the eastward; but here its place is taken by the Asiatic Golden Plover (*C. fulvus*). Canon Tristram found it very abundant in Palestine during winter; and in Egypt, Captain Shelley says, it is "plentiful at times in some parts of the Delta. Towards the end of February we killed several near Damietta." Dr. von Heuglin also found it in flocks on the Egyptian coast. Mr. Layard includes it in the 'Birds of South Africa,' on Dr. Hartlaub's authority. He states, however, that it has not fallen under his own immediate observation—that he procured it at Lamos, on the east coast; but he tells us that M. Jules Verreaux informed him

that during his residence in Southern Africa he shot several Golden Plovers in winter plumage at Zoetendals Vley. On the west coast it has been received by M. Jules Verreaux from Gaboon.

We extract the following particulars as to the habits of the present bird from Naumann:—"At all times its favourite resorts are such places as are overgrown with heather (*Erica vulgaris*) which is not very high or dense (and not where it is high as in Jutland), and where the bird may be seen from some distance. It is therefore also often met with near dry peat moors, where only here and there marshy places occur, and never inhabits for any length of time the true swamp and damp meadows. They spend the night in ploughed fields, crouched down between the small mounds; they sleep but a very short time, and in light nights may be heard at almost any hour, and, like many seminocturnal birds, take a midday siesta.

"The note of the Golden Plover is a clear loud whistle, either of two syllables like *Tlüi*, or three like *Tlüei*, the latter more seldom. The former resembles the note of the Grey Plover, but the latter so much so that a practised ear can scarcely distinguish it. When scared up suddenly, the note is short, like *Tli*. Both sexes call when sitting and flying, but more often when on the wing. The male utters the nuptial note or song when floating in circles through the air above the nest or dropping to the ground in a slanting line; while sitting they seldom utter it. This song consists of a long, heavy, shrill note, like *Taludl-taludl-taludl-taludl*. The young when fledged whistle a clear note, *Tlih*. They feed chiefly on insects, especially a yellowish larva like that of *Tenebrio molitor*, but smaller, and a large black beetle (*Haltica*). Seeds of several field-plants, such as *Polygonum aviculare* and *Scleranthus annuus*, are also found in their stomachs."

Droste says that it arrives in Borkum about the middle of August, and in October is often seen in enormous flocks. It leaves at the first frost and returns again in March. Respecting its habits there, he says:—"It is a true frequenter of the greensward, affecting grazing-places, and, in the outer meadows, dry, sandy localities, and places on the shores which are overgrown with a saline plant (*Glaux maritima*). . . . . Its food consists of worms, beetles, and larvæ, also berries and seeds; and I have reason to suppose that it feeds on the seeds of *Glaux maritima*. It can easily be distinguished by its stout head and narrow extended wings. It certainly resembles the Grey Plover, but is distinguishable by its darker colour and slighter build. It flies swiftly, bowing its wings into the shape of a sickle. Its movements on the wing are easy, but not very swift; standing, its body is held erect. When followed, it tries to escape by running backwards, and has a habit of halting on a hillock to look round; before taking wing, it moves and twists the body as if undecided, lifts its wings high, and then flies off, calling loudly. It is shy and not easily approached, but can be called if its note is well imitated. It is fond of its companions; and if one is shot out of a flock, the rest return and call loudly to the dead bird to induce it to fly off. It is not fond of the company of other birds, except Starlings; I have seen it drive off Redshanks. . . . . They migrate both by day and night. Its call-note is a clear, soft *Tlui*, uttered both when the bird is on the wing and sitting. Even in the darkest nights, when one passes a flock, they may be heard softly calling each other and answering."

Selby says the "Golden Plover is a nocturnal feeder, and during the day is commonly seen squatted upon the ground or standing asleep, with the head drawn down between the shoulders. It runs very fast, and when wounded is difficult to be caught without the aid of a dog. Upon the Continent these birds are abundant during the time of their migrations, as in Holland, parts of

France, Germany, &c. In Sardinia they winter in immense flocks, as well as in other countries of the south of Europe, retiring in the summer to high northern latitudes of Asia and Europe to breed."

Hewitson writes as follows:—"The Golden Plover, though never numerous, is yet pretty generally dispersed over our heathy moors during the breeding-season, and is then rarely met with except in pairs. It is a very watchful bird, and usually discovers itself long before you approach it, by its clear and plaintive whistle, which may be heard at a great distance, and is very deceptive; upon hearing it when in search of their eggs, I have frequently expected to see the bird close beside me, and, after anxiously searching for it with my eyes all around, have discovered it perched at a distance of three or four hundred yards, upon some hillock or rising ground, on which it mostly takes its stand. Though, as I have just stated, usually very wary and difficult to approach during the earlier days of incubation, it will sometimes, when the eggs are nearly hatched, almost allow itself to be trodden upon before it leaves the nest."

Messrs. Gray and Anderson give the following note:—"When the tide is full they repair to fallow grounds in the interior, sometimes travelling inland to a considerable distance. They seem to know instinctively at what hour to leave, so as to reach the coast when the rocks and sands are being exposed as the water recedes. On these occasions the flocks are immense, covering many acres of the shore, and sometimes packing so closely as to form a vast ornithological causeway. In the months of February and March, about the time when Plovers partly assume their breeding-plumage, Mr. Anderson has seen flocks alighting in grass-fields on Enoch Farm, and literally covering about eight or ten acres of ground. A noted haunt for this species in Ayrshire is the farm of Turnberry Warren, about five miles north of Girnan, where many thousands congregate in the pasture-lands near the sea about the middle of July."

Mr. Stevenson, in his 'Birds of Norfolk,' observes:—"The Golden or 'Whistling' Plover, as it is locally termed, is a regular autumnal visitant, but varies as much in numbers, according to the season, as in the time of its arrival. Pretty generally distributed throughout the county, it is met with in flocks of more or less extent throughout the winter months, except during periods of extremely severe weather, when, like other kindred species, it passes southwards, for a time, to return again with the earliest change to a more genial temperature. At such times, after the breaking up of a hard frost, and the reappearance once more of verdure from under the deep snow, the whistle of the Golden Plover, as they rise from the fields, sounds cheerily in the bright sunshine of a winter's morning."

Mr. A. Benzon, of Copenhagen, writes to us as follows:—"The true Danish name *Hjeile* is chiefly used on the peninsula, whereas on the islands, where it seldom is found breeding, it is usually called *Brokfugl*, which appears to be a corruption of the German *Brachvogel*. It lays its first eggs from the middle of April to the early part of May. The first eggs procured on Western Jutland were taken on the 16th of April, the last on the 8th of May. It is common on the Faroes."

The average size of a series of eggs of this bird, from Denmark, Scotland, and Finland, is 2 inches by $1\frac{17}{40}$ inch. In some the ground-colour is pale clay-brown, in others dull yellowish grey, and in others again reddish buff. The underlying shell-markings are purplish brown; and the large roundish overlying surface-spots are rich dark brown, and very clearly defined.

These markings are generally distributed over the surface of the egg. Dr. E. Rey writes to us that the average size of the eggs of this bird in his collection is 52·0 by 34·7 millimetres.

The figures and descriptions are from specimens in our own collection, the summer plumage being drawn from a skin procured by Dahlberg in Lapland, and given to us by Professor Sundevall, and the winter dress being taken from a bird shot at Cookham by Mr. Joseph Ford. The young nestling is described from a specimen in the collection of Mr. J. H. Gurney, jun.

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

*a*. Quickjock, Lapland (*A. Dahlberg*). *b*. Christiania (*Collett*). *c, d*. Cookham, Berks (*J. Ford*). *e*. Pagham, Sussex (*A. Grant*). *f*. Smyrna (*Dr. Krüper*). *g*. Crimea (*W. Schlüter*).

*E Mus. J. H. Gurney, jun.*

*a, b, c*. Greatham, Durham (*J. H. G.*). *d*. Seaton, Durham (*J. H. G.*). *e*. Teesmouth (*J. H. G.*).

*E Mus. Howard Saunders.*

*a, b*. Orkneys (*J. Dunn*). *c*. Malaga (*H. S.*).

*E Mus. H. B. Tristram.*

*a*. Orkneys (*J. Dunn*). *b*. Plain of Acre (*H. B. T.*).



EASTERN GOLDEN PLOVER.
CHARADRIUS FULVUS.

1. GREY PLOVER.
SQUATAROLA HELVETICA.
2. 3. EASTERN GOLDEN PLOVER.
CHARADRIUS FULVUS.

# CHARADRIUS FULVUS.

(EASTERN GOLDEN PLOVER.)

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*Fulvous Plover*, Lath. Gen. Syn. iii. p. 211 (1785).
*Charadrius fulvus*, Gm. Syst. Nat. i. p. 687 (1788, ex Lath.).
*Charadrius pluvialis*, Horsf. Trans. Linn. Soc. xiii. p. 187 (1822).
*Charadrius xanthocheilus*, Wagl. Syst. Av. *Charadrius*, sp. 36 (1827, ex Lath.).
*Charadrius taitensis*, Less. Man. d'Orn. ii. p. 321 (1828).
*Charadrius virginianus*, Jard. & Selby, Ill. Orn. ii. pl. lxxxv. (*c.* 1830).
*Charadrius glaucopus*, Forst. Descr. Anim. p. 176 (1844).
*Charadrius virginicus*, Blyth, Cat. B. Mus. As. Soc. Beng. p. 262 (1849, nec Borkh.).
"*Pluvialis longipes*, Temm.," Bonap. C. R. 1856, p. 417.
*Pluvialis xanthocheilus*, id. tom. cit. p. 417.
*Pluvialis taitensis*, id. tom. cit. p. 417.
*Pluvialis fulvus*, id. tom. cit. p. 417.
*Charadrius auratus*, Schrenck, Reisen Amurl. Vög. p. 410 (1860).

*Figuræ notabiles.*

Jard. & Selby, Ill. of Orn. ii. pl. xxxv. (s. n. *C. xanthocheilus*); Temm. & Schl. Faun. Japon. pl. lxii.; Gould, B. of Austr. vi. pl. 13.

♂ *æstiv.* suprà niger, lætè aureo maculatus, pileo nigricantiore: scapularibus et tectricibus alarum fulvescente et albido maculatis: alâ spuriâ brunneâ latè albo terminatâ: remigibus brunneis, scapis plerumque albis, ad basin et versus apicem brunneis: secundariis conspicuè aureo vel fulvescenti-brunneo extùs maculatis, alâ subtùs grisescente: rectricibus brunneis, albo terminatis, pennis exterioribus albo irregulariter transfasciatis, pennis centralibus fuscescente fasciatis: fronte latâ et supercilio distincto cum collo laterali toto purè albis: lineâ angustâ frontali, loris, facie laterali et corpore subtùs nigerrimis: corporis lateribus et hypochondriis albis nigro variis, pectore laterali aureo lavato: subcaudalibus albis, nigro notatis: subalaribus fumoso-albidis: plumis axillaribus omninò fumosis, angustè albo terminatis: rostro nigro: pedibus plumbeis: iride fuscâ.

*Ptil. hiem.* similis ptilosi æstivæ, sed obscurior, et nigredine pectoris absente.

*Adult male in summer plumage.* Upper surface of the body black, especially the crown, varied all over with spots and bars of bright golden colour; wing-coverts coloured like the back, but the golden spots not quite so rich, and on some inclining to fulvous white, the scapulars also not quite so brightly spotted; greater and primary coverts brown, with a conspicuous white tip; quills brown, the shafts brown at the base and at the tip, white in the middle, the secondaries much elongated, irregularly barred near the tip with paler brown, and spotted with golden; upper tail-coverts obliquely barred with pale greyish brown, and washed with golden; tail alternately barred with dark brown and pale smoky brown, all the feathers tipped with white, and the bars on the two outer feathers nearly all white instead of being smoky brown; a broad white forehead, extending backwards over the eye and forming

a very distinct eyebrow, thence carried down each side of the neck on to the sides of the breast, thus separating the golden back from the black breast by a very broad white line; a very narrow frontal line, lores, cheeks, ear-coverts, entire throat, and centre of the breast black, becoming slightly mixed with white on the abdomen and under tail-coverts; sides of the body white, barred across with black, the upper breast tinged with golden and the lower flanks with smoky brown; under wing-coverts smoky brown, with a dash of white here and there; axillary plumes entirely smoky brown, with a white tip; bill black; feet greyish; iris dusky brown.

*Obs.* The above description is taken from a fully plumaged male in the collection of Mr. Swinhoe, procured by him near Canton on the 2nd of May 1860. We have not been able to examine a female in breeding-dress; for a bird of this sex procured by Mr. Swinhoe at the same time and place is only just beginning to assume the black plumage on the breast. Probably, therefore, the full black breast is not assumed in the female till some time after the male has attained his complete summer livery, as is the case with many *Limicolæ*.

*Winter plumage.* Upper surface of the body much the same as in summer, but the golden spots not nearly so rich in colour or so large, and all of them more or less tinged with pale fulvous; the nape rich golden colour; forehead and lores buffy white; the eyebrows and sides of the face a little brighter in colour, and marked with small specks of brown; there is no indication of the white band along the sides of the neck; wing-coverts margined with whitish, with no trace of golden spots; under surface of the body buffy white, the lower part of the throat and chest marked with specks of brown like the cheeks; sides of the body and abdomen marked with obsolete mottlings of greyish brown, rather more distinctly indicated on the flanks and under tail-coverts; tail for the most part smoky brown, the centre feathers slightly darker, with no traces of the transverse bars, but most of the feathers notched on the outer web with golden or pale buff, the outer ones broadly edged with white, and slightly marked with this colour in the body of the feather.

*Young birds.* The young, according to Jerdon (B. of Ind. iii. p. 637), have the colours somewhat as in the winter plumage; but the yellow spots above are less marked, the breast is more dusky grey, and they do not become so black the first summer as they do subsequently.

*Obs.* The very full account of the synonymy given by Drs. Finsch and Hartlaub in their 'Fauna Central-Polynesiens' leaves us little to say on the subject; but we do not see any difficulty in referring Latham's var. A of the Fulvous Plover, on which Wagler founded his *Charadrius xanthocheilus*, to the present bird. It is clearly a specimen in full winter plumage. We are aware that Wagler's title has been erroneously applied as a synonym of *Eudromias asiaticus*; but on this subject see some excellent remarks by Mr. Harting (Ibis, 1870, p. 205). The name *longipes* of Temminck, by which the present species is recorded in so many standard works and essays, does not appear to have ever been published. Such excellent bibliologists as Dr. Finsch and Professor Schlegel have never stated the book in which this title may be found, though they have both quoted it in their later writings. The first notice that we can find of the existence of this name is in Prince Bonaparte's list of wading birds published in the 'Comptes Rendus' for 1856.

We now give an analysis of the specimens which the kindness of friends has placed at our disposal, inasmuch as great difficulty exists in determining the characters which separate *Ch. fulvus* and *Ch. virginicus* of America. Lord Walden, Mr. R. Swinhoe, and Mr. J. Edmund Harting have placed at our service the beautiful series of Golden Plovers contained in their respective collections, and an account of these birds will be of use to the future student of the present species and its allies. Of the distinctness of *Ch. fulvus*

from *Ch. pluvialis* there cannot be much doubt, and an excellent dissertation on this subject is given in the 'Fauna Central-Polynesiens' of Drs. Finsch and Hartlaub; but *Ch. fulvus* and *Ch. virginicus* are very closely allied. In the above-mentioned work these learned ornithologists remark as follows:—"With regard to the American Golden Plover (*Ch. virginianus*) it is, from its grey axillaries and under wing-coverts and slightly feathered tibia, so closely allied to the Asiatic *Ch. fulvus*, that it is very probable that they are identical. Pickering's observation to the effect that when at sea on the 13th of November, between the Sandwich Islands and California, he procured specimens which were evidently migrating, is worthy of remark. According to Schlegel, *Ch. virginianus*, Bp. (*Pluvialis fulvus americanus*, Sch.), is somewhat larger, and has shorter toes; but Schlegel also remarks that there are specimens in which it is very slight, indeed scarcely perceptible."

The series now before us represents specimens from the following localities:—

Old World.

*North-eastern Africa.* We have in our collection a single specimen from Djedda, on the Red Sea, obtained by the late Mr. S. Stafford Allen, who gave it to Dresser. It is without a great deal of golden on the back, and the scapulars as well as the tail-feathers are notched on the outer webs, not barred or distinctly spotted with golden. The upper part of the breast and sides of the body are smoky brown, and the sides of the neck are specked with brown. This specimen seems to be in full winter plumage, and agrees very fairly with the description above given. Total length 8·3 inches, culmen 1·0, wing 6·2, tail 2·4, tarsus 1·6, middle toe to root of nail 1·05.

*Siberia.* Mr. Harting's collection contains a specimen from Lake Baikal, shot there by Dr. Dybowski on the 29th of November 1869. This bird is in curious plumage; for it retains plentiful remains of the breeding-plumage. The black on the head and scapulars is very deep, the golden spots very bright, the tail transversely barred instead of being notched, and the remains of black are apparent on the chin, breast, flanks, and abdomen, constituting a large patch in the centre of the latter, nor has the black colour wholly disappeared from the ear-coverts. On most of the feathers of the under surface there is a dusky centre to the feather, which is the remains of the black plumage before it is entirely lost; and it is evident, therefore, that the bird changes into its winter dress not by a *direct moult*, but by a gradual change of the black plumes into white ones; this ought to be a good test for distinguishing old birds in autumn from young birds of the year, which could not have had any black breast wherewith to cause the mottled appearance which comes from the remains of the summer dress in the adults. Total length 8·3 inches, culmen 0·95, wing 6·25, tail 2·5, tarsus 1·55, middle toe, without nail, 0·95.

*India.* A female specimen, with no precise indication of locality, in Mr. Harting's collection has lost nearly every trace of summer plumage, with the exception of two black feathers on the breast and some indistinct mottlings on the sides of the body and under tail-coverts; the cheeks and sides of the neck are, as usual, mesially mottled with brown. Total length 9 inches, culmen 1·0, wing 6·25, tail 2·25, tarsus 1·55, middle toe 1·05. Three other specimens are in Mr. Harting's possession, from the Indian Peninsula, given to him by Mr. Blyth. One, a male, is in complete winter dress, being buff all over the face and smoky brown on the breast, the back brownish black, the feathers margined with golden. Total length 8 inches, culmen 0·95, wing 6·25, tail 2·2, tarsus 1·55, middle toe 1·0. The two other examples, brought home by Mr. Blyth, are in changing plumage, one having still considerable remnants of the black dress, the other being nearly in complete winter livery. Total length 8·3–8·5 inches, culmen 0·95–1·0, wing 6·15–6·65, tail 2·25–2·4, tarsus 1·55–1·6, middle toe 1·0. One of these birds, it will be seen, has a very long wing and tarsus.

*Ceylon.* Mr. Holdsworth has very kindly lent us three specimens obtained by him at different times of the year during his sojourn in this island. A female, shot at Aripo on the 8th of December 1869, has still some tokens of its summer dress in the shape of the brown mottlings on the breast, and it has moulted all its quill-feathers, except the longest primaries, which are shooting; no sign, however, of the moult by which the

summer plumage is assumed is apparent at this time of the year, judging from this specimen. Another male bird shot at the same place on the 2nd of February of the same year is in full winter dress. A third specimen, also a male, killed in the north-west of the island on the 16th of August 1866, has nearly lost its summer plumage, and is very dusky underneath, owing to the brown mottlings and edgings which are left as the black disappears from the feathers. Total length 8·5–9·0 inches, culmen 0·9–1·0, wing 5·9–6·1, tail 2·2–2·4, tarsus 1·55, middle toe 1·0–1·05.

*Malacca.* In Lord Walden's collection is one of the late Dr. Maingay's specimens from this country. It still retains considerable remains of summer plumage, having the white band along the sides of the head and neck still plainly indicated, and has a good deal of black left on the breast. In this skin the legs for the first time, instead of appearing blackish, are of a dull ochre-colour. Whether this obtains in the living bird must be determined from the observation of recent specimens. Total length 9 inches, culmen 1·0, wing 6·25, tail 2·35, tarsus 1·55, middle toe 1·0.

*Java.* Five specimens from this island are now before us; three are in full winter plumage, and the other two are changing into it; out of the five, three appear to have yellowish-brown legs. Total length 8·0–9·0 inches, culmen 0·95–1·05, wing 6·25–6·4, tail 2·3–2·4, tarsus 1·5–1·55, middle toe 0·95–1·0.

*Banka.* An example in Mr. Swinhoe's collection, received in exchange from the Leiden Museum, is in winter dress, and measures as follows:—Total length 8·0 inches, culmen 1·0, wing 6·1, tail 2·3, tarsus 1·5, middle toe 1·0.

*Borneo.* One specimen, lent to us by Lord Walden, seems to be a young bird of the year, as there is very little mottling on the breast, this part being almost uniform smoky brown, some of the feathers edged with white. Total length 8·9 inches, culmen 1·0, wing 6·05, tail 2·4, tarsus 1·6, middle toe 1·05. The legs are much inclined to ochre-brown.

*Timor.* One of Mr. Wallace's specimens, obtained in Eastern Timor, is now in Mr. Harting's collection, and has been lent to us by him. It is in full winter plumage, the brown centres to the feathers of the neck being, however, rather distinct. Total length 9 inches, culmen 1, wing 6·4, tail 2·5, tarsus 1·6, middle toe 1.

*Batchian.* Mr. Harting has a specimen from this island, from which we have taken our description of the winter plumage. Total length 8·5 inches, culmen 0·95, wing 6·25, tail 2·5, tarsus 1·6, middle toe 1. The legs in this specimen seem to be brownish, as they are also in another example collected by Mr. Wallace in Batchian, and now in Mr. Swinhoe's collection. This bird has the cheeks, neck, and breast thickly mottled with brown, the remains of the black summer dress. Total length 9·5 inches, culmen 1, wing 6·2, tail 2·3, tarsus 1·6, middle toe 0·95.

*Australia.* Mr. Harting's collection contains two specimens from this country, both in winter plumage, although one of them still retains the remnants of brown mottlings on the breast and flanks. Lord Walden also possesses a skin from Queensland, which has not lost the whole of the black plumage on the under surface; in this specimen the legs appear to have a tinge of ochre, and the other two are certainly tinged with brownish. Total length 8·3–9·0 inches, culmen 0·9–1·0, wing 6·4–6·65, tail 2·3–2·5, tarsus 1·6, middle toe 0·95–1·0. In Mr. Gould's plate of the species in the 'Birds of Australia' the legs are depicted as greyish; and as he had the advantage of examining fresh specimens, too much stress must not be laid on the brownish shade visible in the legs of winter-killed specimens, as this may only exist in the dried skins.

*Obs.* The absence of any dates to most of the specimens above examined prevents us from drawing any satisfactory conclusions as to the changes of plumage exhibited by them. A series of careful observations will have to be instituted before a complete life-history of the present species can be prepared. We now proceed to examine specimens from Eastern Asia, having hitherto followed the range of the species along its western course of migration to its southern winter residence.

*Hainan.* Mr. Swinhoe, during his recent expedition to this island, collected a single specimen of the present species. Although this bird was killed in April it does not exhibit any signs of the approaching breeding-dress, beyond the appearance of a few bright golden spots on the back and a slight tinge of the same

colour among the feathers of the upperside of the breast: the legs have a decided shade of brown. Total length 7·8 inches, culmen 1·0, wing 6·4, tail 2·2, tarsus 1·6, middle toe 1·0.

*Formosa.* A series of seven specimens is now before us, all collected by Mr. Swinhoe, and contained in his own collection and in those of Lord Walden and Canon Tristram. They are principally in winter dress, though three of them exhibit remains of the black plumage on the breast. We notice a shade of brown on the legs of most of these birds, it being more apparent in those further advanced in their winter livery. Total length 8·5–9·0 inches, culmen 0·95–1·0, wing 6·2–6·6, tail 2·1–2·5, tarsus 1·55–1·6, middle toe 0·95–1·0.

*China.* Thanks to the perseverance of Mr. Swinhoe, we have in this country several specimens of the Eastern Golden Plover, collected by him in different parts of China. One obtained at Foochow in October 1859, and now in Canon Tristram's possession, is remarkably deep buff on the under surface of the body, with scarcely any white on the lower part of the breast and abdomen. Total length 9 inches, culmen 0·95, wing 6·4, tail 2·4, tarsus 1·6, middle toe 1·0. Mr. Swinhoe has three specimens from Canton, procured on the 30th of April, 1860; these consist of two females and a male, the latter being in full black summer dress, whereas the hen birds have only a slight appearance of black coming on the breast, the one killed on April 30th being even less advanced than the one killed a few days later. It is evident therefore that the female does not assume the breeding-dress so soon as the male. Dr. Jerdon says that "the alteration of colour to black takes place as well by a partial renewal as by a change in the feather itself." This change is exemplified in Mr. Swinhoe's specimens; for while some black feathers are just sprouting, in others the black colour is gradually spreading over the plumage. Total length 7·5–8·5 inches, culmen 0·75–0·95, wing 5·9–6·3, tail 1·9–2·5, tarsus 1·5–1·65, middle toe 0·9–1·0. The bird which presents the curious minimum measurements of the above specimens is the female shot in May 1860. Out of eight examples of the present species from Amoy only one is in full breeding-plumage, and that one was killed in May 1861. All the others are in different stages of winter dress, one killed in September 1867 having still considerable remains of the black plumage. Total length 7·7–8·4 inches, culmen 0·85–1·0, wing 5·9–6·5, tail 2·2–2·5, tarsus 1·55–1·6, middle toe 1·0–1·05. Of the two males in breeding-plumage the one killed at Canton has very dark legs, while the Amoy skin shows a strong tinge of brown and ochre.

### New World.

Specimens from different parts of America have a longer wing and tarsus than those from Asia; but the specimens examined from North America run very close to the last-named birds. Thus a bird in Mr. Harting's collection, from the Arctic seas, killed in lat. 69° 30′ N., long. 173° 20′ E., on the 3rd of September, 1852, measures as follows:—Total length 9 inches, culmen 0·9, wing 6·5, tail 2·3, tarsus 1·65, middle toe 1·0. Mr. Harting has himself alluded to this bird in his paper on the Barrow collection at Oxford (P. Z. S. 1871, p. 115), and we cannot do better than produce his words here:—

"The characters by which these two may be distinguished have not been defined. Both are smaller than the European *C. pluvialis*; and both differ from it in having the axillary plumes smoke-grey instead of pure white. The tarsus, also, is somewhat longer and more slender in proportion than that of the European bird. I have now before me eight skins of *C. virginicus* from various American localities, north and south, and fourteen skins of *C. longipes* from India, China, Australia, and the Malay archipelago. A careful comparison of these gives the following results:—(1) That *C. longipes* is invariably smaller than *C. virginicus*, the respective measurements being as under—

| | Bill. inch. | Wing. inches. | Tarsus. inch. |
|---|---|---|---|
| *C. virginicus* | 1 | 7 to 7·4 | 1·6 |
| *C. longipes* | ·8 to ·9 | 6·4 to 6·6 | 1·5 |
| *C. pluvialis* | ·9 | 7·5 | 1·4 |

(2) That *C. virginicus* at all seasons (but more especially in winter) has far less of the golden colour on the

dorsal plumage and on the breast than *C. longipes* has, the prevailing colour on the former bird being brown of two shades in winter, interspersed with black and golden in summer.

"I have a Golden Plover in my collection which was taken at sea in lat. 69° 30′ N., long. 173° 20′ E., many miles N.W. of Point Barrow. This is the furthest point north, so far as I am aware, at which a Golden Plover has been met with.

"These measurements, as well as the general coloration, show that the specimen is referable to the Asiatic, and not to the American race, although it was met with much nearer to the American than to the Asiatic coast."

Unfortunately we have not all the plumages of the American Golden Plover represented in the series before us, and we cannot therefore give a detailed account of the changes through which the bird passes. For comparison, however, with the Eastern Golden Plover, we give a comparative list of the measurements of the specimens examined by us, as follows :—

| No. | Sex. | Locality. | E Mus. | Total length. | Culm. | Wing. | Tail. | Tarsus. | Middle toe. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | inches. | inch. | inches. | inches. | inch. | inch. |
| 1. | .. | Moose Factory, Hudson's Bay. | J. E. Harting. | 8·8 | 0·9 | 6·6 | 2·5 | 1·7 | 0·9 |
| 2. | .. | Texas (*Heermann*). | do. | 9·6 | 1·0 | 7·3 | 2·8 | 1·7 | 0·95 |
| 3. | ♂ | do. do. | H. E. Dresser. | 9·5 | 1·0 | 7·0 | 2·8 | 1·7 | 1·0 |
| 4. | .. | do. do. | do. | 9·0 | 1·0 | 6·6 | 2·7 | 1·7 | 1·0 |
| 5. | .. | do. do. | do. | 9·0 | 1·0 | 7·2 | 2·8 | 1·7 | 1·0 |
| 6. | ♂ | Guatemala. | J. E. Harting. | 9·0 | 1·0 | 7·0 | 2·9 | 1·7 | 0·9 |
| 7. | ♀ | do. | do. | 9·0 | 1·0 | 7·1 | 2·6 | 1·7 | 0·95 |
| 8. | ♂ | Nauta, Peruvian Amazons (*E. Bartlett*). | do. | 9·6 | 0·95 | 6·9 | 2·6 | 1·65 | 0·95 |
| 9. | ♂ | Cosnipata, Peru (*H. Whitely*). | do. | 9·8 | 1·0 | 7·0 | 2·8 | 1·7 | 0·95 |
| 10. | ♀ | Tambo valley, Peru (do.). | do. | 10·0 | 0·95 | 6·7 | 2·7 | 1·7 | 1·0 |
| 11. | ♀ | do. do. (do.). | Lord Walden. | 9·0 | 0·95 | 6·7 | 2·6 | 1·6 | 0·9 |

A summary of these measurements gives the following result :—

*Ch. virginicus* : Long. tot. 8·8–10·0 inches, culmen 0·9–1·0, al. 6·6–7·3, caud. 2·5–2·9, tars. 1·6–1·7, dig. med. 0·9–1·0.

*Ch. fulvus* : Long. tot. 7·5–9·0 inches, culm. 0·75–1·05, al. 5·9–6·65, caud. 2·2–2·5, tars. 1·55–1·6, dig. med. 0·95–1·05.

It will be seen, therefore, that the American bird is almost always larger; for, though some specimens of *Ch. fulvus* are nearly equal in size to *Ch. virginicus*, there are none of them which get the wing 7·3 inches in length. The tarsus of the American species seems to us to be shorter, and the colour of the upper surface always more grey, especially about the hinder part of the neck. Whether the summer plumage presents any differences will remain to be seen.

## Explanation of the Plates.

The first Plate represents the adult male of the Eastern Golden Plover in full breeding-plumage, while on the left is drawn a bird in autumn rapidly losing the black garb of summer. This bird is represented with its wings raised, in order to show the smoke-coloured axillary plumes, by which it may be distinguished at once from both the common Golden and the Grey Plovers.

On the second Plate is seen the bird in winter plumage (figs. 2 & 3); and the mottled appearance on the breast, which we take to be the last remains of summer plumage, and to which we have made frequent reference above, is represented. In the foreground is a Grey Plover in full winter dress. We believe that there will now be no difficulty in recognizing any of the species of Grey or Golden Plovers in Europe by the aid of the

four Plates we have devoted to the three species. A glance at the figures of the Grey Plover and Golden Plover will distinguish them at a glance in their summer plumage, and the Eastern Golden Plover may be recognized from the common species by its much smaller size, and by the bareness of the tibia. In autumn, when the Grey Plover is spotted with golden on the back, and might be confounded with the Golden Plovers, all three species may be determined by the colour of the axillary plumes, as represented in the Plates; thus, apart from the question of the hind toe in *Squatarola helvetica*, the species always has black axillaries, while *Ch. pluvialis* has these plumes white, and in *Ch. fulvus* they are smoke-coloured. These distinctions hold good all ages of the birds.

The present species has a very wide range in the eastern part of the Old World, but does not often extend into Europe. It has once occurred to Herr Gätke in Heligoland, and, as will be seen by the following notice, it has been now twice met with in Malta. In his "List of the Birds observed in the Islands of Malta and Gozo" (Ibis, 1864, p. 141), Mr. Wright observes:—"Bree says that *Charadrius longipes*, a small variety or race found on the Asiatic sea-coasts, has been captured at Malta; and Mr. Tristram writes to me that the specimen referred to was shot by Colonel Drummond-Hay." In his second appendix to the above list (Ibis, 1865, p. 463) he writes:—"I have to record the capture in Malta of a second specimen of this denizen of Asia, which, always excepting that extraordinary rendezvous for exotic and little-known species, Heligoland, is the only spot in Europe in which it has hitherto been found. This example was shot in May 1861. It was consequently in summer plumage; and, before handling it, I mistook it for a small specimen of *Charadrius pluvialis* in bad condition. It was preserved by a Maltese bird-stuffer, merely on account of its being in a state of plumage not noticed before in this island, the common Golden Plover, its close ally, being known here only in its winter dress. Through the kindness of Signor A. Zammit, who became possessed of it, I have been enabled to examine and compare it with *Charadrius fulvus*." It has likewise been met with in Algeria; for Loche records a single occurrence near Kouba, in the month of December.

We have great pleasure in introducing to the notice of ornithologists what we believe to be a new instance of the occurrence of the Eastern Golden Plover in Europe, communicated to us by our friend Dr. Taczanowski, who writes as follows:—"In November 1846, I met with one on a plain about a league from Lublin, with a flock of Golden Plovers. It was easily distinguishable by the great difference in size; and whenever it joined the flock the others chased it away. I succeeded in killing it, and it is now in the Warsaw Museum. It is a young bird in its first plumage, and agrees precisely with Asiatic specimens."

As far as we can see, no record has ever been published of this species in North-eastern Africa; but our collection contains a specimen from Djedda, on the Red Sea, shot by the late Mr. S. Stafford Allen. Drs. Finsch and Hartlaub write:—"Its range extends not only to Eastern Asia and Polynesia, but also to the south of Africa. In the Leyden Museum is an example procured by Verreaux at Lataku. In Southern Africa its range probably inosculates with that of *Ch. pluvialis*, as it does in Western Siberia. It is not known if *Ch. fulvus* extends its range to Western Africa; but one would expect, as is stated in the 'System der Ornithol. Westafrica's,' to meet with *Ch. pluvialis* there. This species can only be looked on as an accidental winter visitor to South Africa."

It is no doubt the bird called by Pallas *C. pluvialis*. He says it is rare in the northern

parts of Russia, but exceedingly common, along with the Grey Plover, in Siberia, migrating in the autumn in flocks, along with other species, to more southern localities, at the same time as the Dotterell. It affects cattle-pastures and the banks of small rivers. Steller likewise observed it in Kamschatka in autumn. It breeds within the polar circle. Dr. Taczanowski also says that Dybowsky has sent individuals, in different stages of plumage, from Dauria and Lake Baikal, and he has also obtained it from southern Siberia. Von Middendorff says that he observed it on the Tundras of the Taimyr, at 74° N. lat., in full summer plumage; but large flocks only appeared on the 4th of June. On the 17th of June they had eggs. On the 2nd of August they assembled on lake Taimyr, to return; and after the 9th of August none were visible. On the Boganida (70° N. lat.) they arrived on the 24th of May, and the last were seen on the 31st of August. They nested on the moors of Uldskoj-Ostrog. He remarks that some of his birds, shot in the high north, had the axillaries white, but that the birds procured at Uldskoj-Ostrog were small and had brownish-grey axillaries, though the tarsi measured only 37·5 millims. Dr. von Schrenck procured, through Dr. Maack, a female of this species, near Albasin, on the 15th of June; and Dr. Radde observed it on the central Onon and in the Bureja mountains in September. Concerning its occurrence in Japan, Mr. Henry Whitely writes:—"Although this is by no means a rare bird, I never had the opportunity of seeing one alive, all my three specimens having been bought of native dealers in Wild Ducks, Grouse, and the like, on the 24th of September and the 3rd of October, 1865, respectively." Mr. Swinhoe gives its range as throughout China. He procured it between Takoo and Peking, and says that it is a common bird near Canton, passing the summer there. In Formosa, he writes, it is "common with us all the year round, breeding in great abundance on the south-west marshy plains." During his excursion to Hainan he also met with it, and gives the following note:—"This Golden Plover was common in the marsh near the city on the 5th of February. We found it in the dry rice-fields of Paklai (W. Hainan), on the 21st of March, and abundant among the sweet-potato gardens of Hoitow (W. Hainan) on the 23rd of March. On the 2nd of April, at the part of Kiungchow, we found them on the beach; they were then beginning to acquire the black under dress of summer." Dr. Jerdon states:—"The Golden Plover occurs throughout India in open plains, grassy downs, ploughed fields, and on the edges of rivers, lakes, &c., associating in flocks of various magnitude, and feeding on beetles and other hard insects, worms, &c. It has a shrill whistling call, and flies very rapidly. Many breed in this country, even towards the south, as at Nellore, but some appear to pass northwards for that purpose, and to return in September." The late Captain Beavan says "I found this species tolerably abundantly in the neighbourhood of Julpigoorie, but I do not recollect it in Maunbhoom. It is, occasionally, I hear, found near Umballah." Major Irby, in his notes on 'Birds observed in Oudh and Kumaon,' says that the present species was found by him "in flocks on the banks of the Logra and Choka, and occasionally on plains some distance from those rivers." In Ceylon Mr. Holdsworth tells us that this species is very common in winter in the north of the island, sometimes extending as far south as Columbo.

It would be needless here to record the names of all the different Malayan localities where the Eastern Golden Plover has occurred. In the 'Museum des Pays-Bas' Professor Schlegel gives a list of the specimens contained in the Leiden Museum, more than sixty in number, and these prove that actual specimens have been collected in nearly every island of the Malay

archipelago. It goes to Australia; and Mr. Gould, in his 'Hand-book,' gives the following account of the species:—"Although nowhere very abundant, this bird is generally dispersed over all the colonies from Tasmania to the extreme north of the continent of Australia. In all probability it is the same bird that is found in the island of Java, and more than probably the species inhabiting India; its range, therefore, is very extensive. I obtained several specimens on the banks of the Derwent, in Tasmania, observed it in small numbers on the flats below Clarence Plains, and also killed examples on one of the islands in Bass's Straits. Its habits, manners, and general economy so closely resemble those of the Golden Plover of Europe (*Charadrius pluvialis*) that a description of one is equally characteristic of the other. Like that bird, it frequents open plains in the neighbourhood of marshy lands or the sea-beach, runs with amazing facility, and flies with equal rapidity. Indications of the black colouring of the breast or breeding-plumage begin to appear early in the spring, and as the season advances every variety of colouring occurs, from the mottled yellow of winter to the uniform black under surface of summer, which latter state, however, is but seldom seen; whence I am induced to doubt its remaining to breed in any of the southern parts of Australia." All over Oceania it likewise seems to range; and a detailed account of the exact localities where the species has been met with will be found in the above-mentioned book by Drs. Finsch and Hartlaub on the birds of Central Polynesia. Dr. E. Gräffe found this species at Tongatabu, and writes concerning it:—"They occur in flocks, which, on sand-banks which offer abundance of food, consist of from thirty to fifty individuals; they run on the sand-banks left dry at low water, seeking for crustacea, small fish, &c. If approached within gunshot, one will utter a shrill *tuli luli twi twi*, which the rest repeat, and then they take flight. At high water they frequent the open grassy places on fields and fallows. This species is found all the year round at Tongatabu, but is most numerous from October to March, and during the season of migration."

The description of the egg is thus given by Mr. Swinhoe:—"Its eggs, four in number, are laid in a loose nest of dried grasses and fibres placed in a hollow. They are of a yellowish-grey ground-colour, blotched and spotted with deep blackish sepia, and have occasional obsolete purplish-grey spots. They do not vary much in size, are narrowed near the end, and measure 1·5 inch by 1·1."

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

*a*. Djedda, Rea Sea (*S. Stafford Allen*). *b*. Hakodadi, September 24th, 1865 (*H. Whitely*).

*E Mus. J. Edmund Harting.*

*a*, ♂. Lake Baikal, November 29th, 1869 (*Dybowski*). *b*, ♂. India (*E. Blyth*). *c*, *d*. Calcutta (*E. Blyth*). *e*, ♀. India (*Deyrolle*). *f*, *g*, ♂, ♀. Java (*Frank*). *h*. East Timor (*A. R. Wallace*). *i*. Batchian. *j*. Australia (*Verreaux*). *k*. Australia. *l*, *m*, *n*. Amoy, China, May 1861, October 1866, and September 1867 (*R. Swinhoe*). *o*, ♀. Hakodadi, October 3rd, 1865 (*H. Whitely*).

*E Mus. H. B. Tristram.*

*a*. S.-W. Formosa (*R. Swinhoe*). *b*. Foochow, October 1859 (*R. Swinhoe*).

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*E Mus. E. W. H. Holdsworth.*

*a*, ♂. N.-W. Ceylon, August 16th, 1866 (*E. W. H. H.*). *b*, *c*, ♂, ♀. Aripo, N.-W. Ceylon, February 2nd and December 8th, 1869 (*E. W. H. H.*).

*E Mus. Lord Walden.*

*a*. Malacca (*Maingay*). *b*, *c*, *d*. Java (*Frank*). *e*. Borneo. *f*. Queensland. *g*. S.-W. Formosa (*R. Swinhoe*). *h*. Amoy, China (*R. Swinhoe*). *i*, ♀. Hakodadi, Japan, October 3rd, 1865 (*H. Whitely*).

*E Mus. R. Swinhoe.*

*a*, ♂. Banka (*Mus. Lugd.*). *b*, ♂. Batchian (*A. R. Wallace*). *c*. Hainan, April 1868 (*R. S.*). *d*, *e*, *f*, *g*, *h*. S.-W. Formosa, 1861 (*R. S.*). *i*, ♀. April 30th, 1860 (*R. S.*). *j*, *k*, ♂, ♀. Canton, China, May 2nd, 1860 (*R. S.*). *l*, *m*, *n*, *o*. Amoy, China, September, October, and November 1866 (*R. S.*).

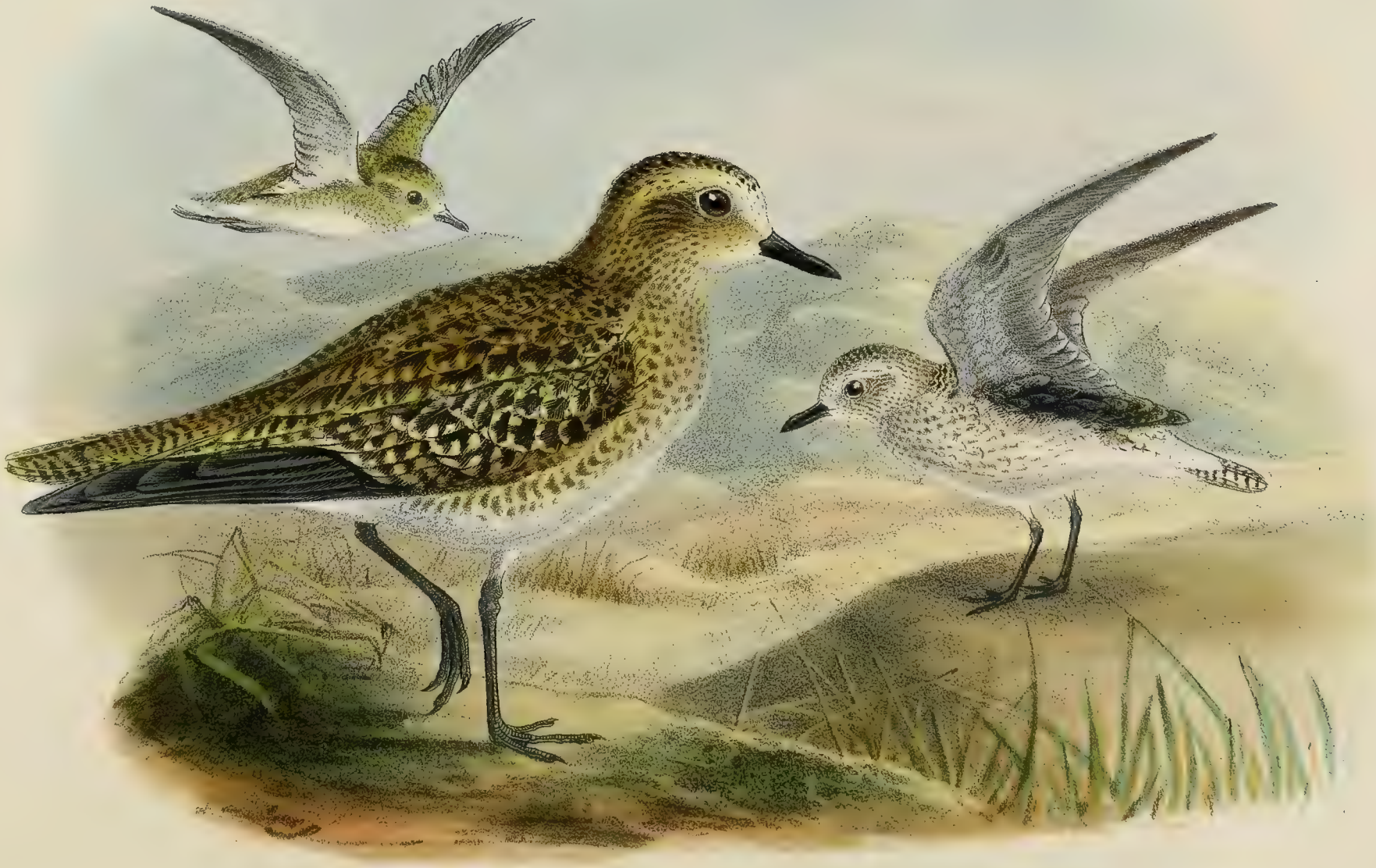
## Genus SQUATAROLA.

*Vanellus* apud Brisson, Orn. v. p. 100 (1760).
*Tringa* apud Linnæus, Syst. Nat. i. p. 250 (1766).
*Charadrius* apud Pallas, Reise Russ. Reichs, iii. p. 699 (1773).
*Squatarola*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 29 (1816).
*Pluvialis* apud Macgillivray, Hist. Brit. B. iv. p. 86 (1852).

This genus contains but a single species, *Squatarola helvetica*, which differs from *Charadrius* in having a small hind toe, whereas the species included in the genus *Charadrius* possess only three anterior toes. This bird inhabits the major portion of the globe at one season or another, its range being given in the following article.

In habits the Grey Plover closely resembles its ally *Charadrius pluvialis*, frequenting the same localities; but it appears to be, as a rule, rather more partial to the sea-shore than that species and its congeners. Like them it feeds on insects, worms, &c., and will frequently wade in the water up to its belly in search of food. It breeds in the extreme north, its nest being like that of *Charadrius pluvialis*, placed on the ground; and it deposits four eggs, like those of that species, but rather different in markings. Full particulars respecting its breeding-habits are given in the appendix to the following article.

*Squatarola helvetica* has the bill about as long as the head, straight, rather stout; upper mandible with the dorsal line straight to the end of the nasal sinus, then slightly raised, and decurved to the tip, which is rounded but sharp; nasal sinus very long; nostrils linear, pervious, subbasal; wings long, pointed, the first quill longest; tail moderate, rounded; legs moderately long, slender; tibia bare for about one third of its length; tarsus covered laterally and anteriorly with small hexagonal scales; toes four in number, the hind claw very small and elevated; anterior toes moderate, stout, scutellate above; claws short, very slightly curved, obtuse, the one on the middle toe dilated on the inner edge.



GOLDEN PLOVER.
CHARADRIUS PLUVIALIS.



GREY PLOVER.
SQUATAROLA HELVETICA.

# SQUATAROLA HELVETICA.

(GREY PLOVER.)

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*Tringa helvetica*, Linn. Syst. Nat. i. p. 250 (1766, ex Briss.).
*Tringa varia*, Linn. Syst. Nat. i. p. 252 (1766, ex Briss.).
*Tringa squatarola*, Linn. Syst. Nat. i. p. 252 (1766, ex Briss.).
*Charadrius hypomelanus*, Pall. Reisen Russ. Reichs, iii. p. 699 (1773).
*Charadrius nævius*, Gm. Syst. Nat. i. p. 692 (1788, ex Beseke).
*Vanellus melanogaster*, Bechst. Naturg. Deutschl. p. 356 (1809).
*Squatarola grisea*, Leach, Syst. Cat. Mamm. &c. Brit. Mus. p. 29 (1816).
*Squatarola squatarola*, Cuv. Règne Anim. i. p. 467 (1817).
*Squatarola varia*, Boie, Isis, 1822, p. 558.
*Vanellus helveticus*, Bonn. et Vieill. Enc. Méth. iii. p. 1077 (1823).
*Charadrius hypomelas*, Wagl. Syst. Av. *Charadrius*, sp. 43 (1827).
*Squatarola cinerea*, Fleming, Brit. An. p. 111 (1828).
*Squatarola grisea*, Less. Traité d'Orn. p. 543 (1831).
*Charadrius pardela*, Pall. Zoogr. Rosso-Asiat. ii. p. 142 (1828).
*Charadrius squatarola*, Naum. Vög. Deutschl. vii. p. 265, t. 178 (1834).
*Squatarola helvetica*, Keys. & Blas. Wirb. Eur. p. 207 (1840).
*Squatarola melanogaster*. Malh. Faun. Orn. Sicil. p. 166 (1840).
*Vanellus squatarola*, Schl. Rev. Crit. p. lxxxiv (1844).
*Charadrius helveticus*, Kjærb. Naum. 1850, p. 6.
*Pluvialis squatarola*, Macgill. Hist. Brit. B. iv. p. 86 (1852).
*Squatarola wilsoni*, Licht. Nomencl. Av. p. 95 (1854).
*Charadrius longirostris*, A. Brehm, J. f. O. 1854, p. 79.
*Squatarola megarhynchus*, A. & L. Brehm, Vollst. Vogelf. p. 284 (1855).
*Squatarola rhynchomega*, Bonap. Compt. Rend. 1856, p. 417.
*Pluvialis varius*, Degl. & Gerbe, Orn. Europ. p. 127 (1867).
*Charadrius varius*, Finsch und Hartl. Vög. Ost-Afr. p. 644 (1871).

*Grey Plover*, English; *Vanneau-Pluvier*, French; *Pivieressa*, Italian; *Chorlito*, Spanish; *Tarambola*, Portuguese; *de Goudkievit*, Dutch; *Kibitz-Regenpfeifer*, German; *Strand-Brokfugl*, Danish; *Kustpipare*, Swedish; *Rjanka Tooles*, Russian.

*Figuræ notabiles.*

Gould, B. of Eur. iv. pl. 290; Yarr. Brit. B. ii. p. 413 (1843); Naum. Vög. Deutschl. vii. Taf. 178; Kjærb. Orn. Dan. Afb. xxx. fig. 3; Gould, B. of Austr. vi. pl. 12; Aud. B. of N. Am. v. p. 199, pl. cccxv.; Schl. Vog. Nederl. pl. 217; Fritsch, Vög. Eur. Taf. 38. figs. 7, 8.

♂ *æstiv.* suprà nigra, ubique cinerascenti-brunneo lavata, et conspicuè albo transfasciata: capite antico et laterali cum colli lateribus purè albis, capite centrali et nuchâ cinerascentibus et obscurè nigro marmoratis: tectricibus alarum dorso concoloribus, majoribus magis cinerascentibus: tectricibus primariarum et remigibus nigris, pennis minoribus extùs ad basin albis, secundariis intimis cinerascenti-brunneis extùs albo maculatis et nigro irregulariter transnotatis; tectricibus supracaudalibus et caudâ purè albis, nigro transfasciatis: facie laterali, maculâ albâ infraoculari exceptâ, et corpore subtùs nigerrimis: pectoris summi lateribus, abdomine imo cum cruribus, subcaudalibus et subalaribus purè albis: his imis fumoso-cinerascentibus: plumis axillaribus nigerrimis: rostro nigro: pedibus cinereo-nigris: iride nigricante.

♀ mari simillima.

♂ *hiem.* suprà cinerascens, plumis medialiter nigricantibus, albo marginatis: fronte et pileo laterali cum maculâ infraoculari albidis paullò cinerascente variis: genis albidis obscurè nigricante striatis: tectricibus alarum cinerascentibus dorso concoloribus sed latiùs albo marginatis: remigibus nigricantibus, scapis medio albis, pennis minoribus magis cinerascentibus et albo terminatis, extùs ad basin quoque conspicuè albis, secundariis intimis dorso concoloribus, nigricante transversim notatis, utroque pogonio albo maculato: tectricibus supracaudalibus caudâque albis nigro transfasciatis, rectricibus exterioribus ferè omninò albis, sparsim nigro notatis: subtùs albus, pectore antico et corporis lateribus cinerascente variis: plumis axillaribus nigris.

*Juv.* suprà nigricans, ubique aurato maculata: collo postico et laterali genisque cinerascenti-albidis, nigricante variis, his clariùs cinerascente striolatis: fronte, loris et supercilio lato albidis, hôc nigricante lineato: uropygio albo: caudâ albâ, aurato lavatâ: remigibus ut in adultis coloratis, sed magis cinerascentibus, pennis minoribus extùs ad basin conspicuè albis, secundariis aurato lavatis et maculatis: subtùs alba, pectore superiore cinerascente et nigricante vario, paullulum aurato lavato: plumis axillaribus nigris: subalaribus et subcaudalibus albis, illis imis fumoso-cinerascentibus.

*Adult male in breeding-plumage.* Forehead and sides of the head and neck white, this colour extending all down the latter, and widening out on to the sides of the upper breast; centre of the crown dusky, owing to the bases of the feathers not being completely obscured; hinder neck also a little dusky; back and scapulars black, washed with ashy-brown here and there, and everywhere spotted or banded with white; rump more decidedly ashy brown, slightly varied with irregular white margins to the feathers; upper tail-coverts pure white, with more or less complete bars of black across the feather; upper wing-coverts ashy-brown, especially the least ones at the bend of the wing, the feathers slightly mottled with black and very thickly spotted and barred with white, the greater coverts entirely ashy-brown, irregularly waved with white on the outer web, the outermost greater coverts and primary coverts blackish brown, with only a spot of white at the tip; quills black, the smaller feathers white on the outer base, showing a conspicuous white speculum, the innermost secondaries ashy-brown, spotted with white on the outer edge of both webs and indistinctly marked with oblique bars of black; tail white, irregularly barred with black, the two centre feathers ashy-grey towards the tip; sides of the face, with the exception of a little white spot under the eye, and entire throat and breast black, the centre of the latter having one or two white feathers; sides of the body, thighs, and abdomen, as well as the under tail-coverts, pure white, the latter slightly spotted with black; axillary plumes black; under wing-coverts white, the lower ones smoky grey; bill black; legs greyish black; iris blackish. Total length 10·5 inches, culmen 1·2, wing 7·5, tail 2·8, tarsus 1·65, hind toe 0·15.

*Adult female.* Similar to the male, but has the breast not quite so deep black. We state this with some

diffidence, not being quite certain whether it is the adult female or the young bird of the previous year gaining his first breeding-plumage, which has the breast tinged with brownish. All the specimens examined which had this tinge happen to be females.

*Male in spring plumage.* Much more white than in full summer dress, the approach of which is indicated by the black which is appearing everywhere on the upper and under surface, the breast being for the most part black, but mottled all over by the white feathers which remain.

*Adult male in winter plumage.* Above greyish brown, the centres of the feathers darker brown with narrow black shafts and white edgings; forehead and sides of the face white, marked with lines of dusky brown, which are most conspicuous on the cheeks; wing-coverts coloured like the back, but the white margins to the feathers very broad, the outermost greater coverts as well as the primary coverts black, with a white margin to the inner web; quills black, the shafts white in the middle, and the smaller feathers marked with white on the outer web; upper tail-coverts pure white, with irregular bars of ashy brown here and there; tail-feathers white, barred transversely with greyish brown, these markings becoming narrower and more irregular towards the outer feathers, which are almost entirely white; under surface of the body white, the lower part of the throat striped with ashy brown, the fore part of the breast and flanks being indistinctly mottled with greyish brown; under wing- and tail-coverts white, slightly marked with black, the lowest under wing-coverts smoky grey; axillary plumes black; bill and feet black; iris blackish. Total length 12 inches, culmen 1·2, wing 7·6, tail 3·0, tarsus 1·7.

*Young.* Crown of the head blackish, with distinct spots of golden-yellow; forehead, lores, and a spot under the eye white, as also a very distinct eyebrow, which, however, is streaked with black; cheeks and ear-coverts whitish, streaked with dusky brown, and distinctly washed with golden; sides of the neck greyish, mottled slightly with black; back blackish, all the feathers having golden edgings, some of them fading into white; wing-coverts coloured like the back, washed with golden, but a little inclining to ashy grey; the greater and primary coverts clear ashy brown, with broad white margins; quills blackish, the shafts white in the centre, and all the primaries narrowly margined with white round the end of the feather, the smaller quills marked with white on the external base of the feather, being also more grey in colour and broadly margined with white, the innermost secondaries blackish, spotted with golden; rump and upper tail-coverts blackish, with spots of golden, the lowest coverts pure white; tail white, with transverse bars and spots of greyish black, the middle feathers washed with golden; throat, breast, and abdomen, as well as the under wing-coverts, white, the tail-coverts somewhat spotted on the outer edge with black, and the lowest under wing-coverts smoky grey; the lower part of the throat and fore part of the breast dusky grey, mottled, more especially on the sides of the breast, with irregular streaks and lines of darker grey.

*Obs.* In the stage of plumage just described the Grey Plover is exceedingly similar to the Golden Plover, being everywhere spotted with golden; but the present species may always be distinguished at all ages by the *black axillaries*. The Grey Plover has also a much larger bill; and, of course, the hind toe generically separates it from the Golden Plover; but the black axillaries are an unfailing character, by which the bird may be known, even in life. The young Grey Plover varies exceedingly in the amount of golden colour on the plumage, this predominating in the young stage, and becoming gradually bleached into white as the bird grows older.

*Explanation of the Plates.* In order to assist in the determination of the Grey Plover in its young or golden stage of plumage, the bird has been drawn side by side with a Golden Plover, both being in autumn

dress. The right-hand figure illustrates the Grey Plover, as will be seen by the black axillaries, these being white in the Golden Plover, as exhibited by the flying bird on the right hand of the Plate. The full winter plumage of the Grey Plover is illustrated in the Plate of the Eastern Golden Plover.

The Grey Plover is one of the most cosmopolitan of birds, being met with in almost all parts of the globe at one time or another. Breeding in high northern latitudes, it ranges in winter as far as Australia and Southern Africa, and is also found at that time of the year in the Antilles and Central America. We are unaware whether it occurs in South America, although Lichtenstein gives the locality of his *C. wilsoni*, which Drs. Finsch and Hartlaub refer to this species, as Bahia; but as he states that this place is in North America, we cannot place much confidence in these specimens, uncorroborated as they are by the observations of more recent observers.

In Great Britain it is more common during the autumnal migration, although specimens, in full breeding-plumage, are often shot in this country in spring. Mr. Stevenson, in his 'Birds of Norfolk,' observes that the "Grey Plover, though, as compared with the Golden, at no time very numerous, visits us regularly in autumn, and usually make their appearance on Breydon and other parts of the coast the first week in October. About the beginning of May these Plovers again make their appearance on their way northward, having at that time nearly completed their full summer dress." In Scotland Messrs. Gray and Anderson state that it is "very sparingly met with on the coasts. It appears to be much commoner in the eastern counties than with us." Mr. R. Collett writes from Norway:—"Breeds here and there on the fells, chiefly in the northern part of the country, where it is found during the summer at Sulitjelma (teste Lövenhjelm), at Nordkyn (Wallengren), and on several occasions in East Finmark (Nordvi). In the southern portions of the country it is generally seen in the autumn, where it is found annually, chiefly in flocks, near Christiania. It has also been shot at Frederikstad, at Christiansand, at Farsund, and in the interior of the country at Mjösen and the Tyrifiord, and may probably breed on the southern fells." Mr. A. Benzon, of Copenhagen, kindly informs us that "this bird, called in Danish 'Strandbrokfugl,' is only found in Denmark in September on migration, for a short time, and is by no means common; I have on several occasions procured it. I have it also from Greenland. It is very doubtful if it breeds in this country. Amongst eggs of *Totanus glareola*, from Jutland, I have seen pale, slightly spotted eggs, which may possibly be those of this bird. These are in the possession of Mr. Statsrevisor Fischer, and were figured by Bædeker, in his work, as the eggs of the Grey Plover; but I do not look upon them as authentic."

In Germany it is found on the coasts, but during migration is not often seen in the interior of the country; and Schlegel says that in Holland it is found "on the coast in October and November, and again in May on its northward journey." De Selys Longchamps states that it is common in Belgium on the sea-board during the double migration. In Alsace, according to Krœner, it is "accidental in autumn during passage, is seen more seldom than the Golden Plover." Degland and Gerbe record that it appears periodically in France on the sea-coasts, and in the interior of the country on its double migration. It is found from the middle of May to the middle of July, and in August and September. Messrs. Jaubert and Barthélemy-Lapommeraye state that in the south of France these birds are found on passage in November and the end of March. Bailly writes:—"Passes through Switzerland and Savoy periodically in the middle of

March and commencement of April, at the same time as the Golden Plover and Lapwing; passes also southward in the autumn." Mr. Howard Saunders sends us the following note:—"This species is abundant on the autumn and spring migrations through southern Spain; but during the winter months I found but few in the markets, and the majority evidently proceed further south. I obtained individuals with full black breasts as late as the 17th, at Malaga, and birds of the previous year on the 23rd of May." Major Irby also writes to us:—"In Andalusia I have found this species an autumnal migrant; but it occurs on the coast occasionally in winter. The first seen was on the 9th of November, and the last on the 22nd of May, when I shot a pair near Gibraltar, the male far advanced and, indeed, in nearly perfect breeding-plumage, the female being not in quite such a forward state." Mr. Tyrwhitt Drake found it in Morocco; and Loche says that it is only accidental, during migration, on the coasts of Algeria. Bolle procured it in the Canary Islands in winter. In Italy and Sicily it is also a passing migrant; and Lord Lilford observes:—"I occasionally saw this species in Corfu and Epirus in January, February, and March 1857. Some specimens, killed in the island in the latter month, were in full breeding-plumage. I never saw the Grey Plover in large troops, but almost invariably in pairs, or small parties of four or five individuals."

Lindermayer says that it "arrives in autumn; and a few winter in Greece, leaving again early in March. Von der Mühle agrees with the above, and remarks that he has seen birds there in May in nearly full breeding-plumage. Mr. Robson says that in Turkey and Asia Minor they are not uncommon, many specimens being shot in the autumn by sportsmen for the table; several stay over the winter. Canon Tristram records it as a "winter visitant to Palestine, where it is found in thousands in the plains and cultivated lands." Von Nordmann says that is very common in spring and summer in the provinces of New Russia, where, however, it does not winter.

Lehmann, during his journey to Bokhara, procured a single specimen from the Caspian steppe. Pallas states that it occurs all over Siberia. Von Middendorff observed it "breeding both in the Byrranga mountains (74° N. lat.), and also on the Boganida (71° N. lat.), although much rarer than the Golden Plover; and Radde found a pair near the Onon in September 1856, and von Kittliz met with it in Kamschatka. Mr. Swinhoe states that it is a winter visitant to the coasts of China and Formosa from the north. He also writes, "a specimen of the Grey Plover was shot on the mud of the Hungpe lagoon in West Hainan on the 30th of March." The same author, writing on the 'Birds of Northern Japan,' observes:—"Included in Cassin's list; but he surely must refer to the allied form *C. mongolicus*, Pall., though Cassin appears rather positive as to its identity:" there can be no doubt, however, that the bird visits Japan, as it was procured there by Siebold. Dr. Jerdon, in his 'Birds of India,' gives the following note:—"The Grey Plover is found occasionally throughout India in the cold season, chiefly, perhaps, near the sea-coast and in the north of India. I have obtained it from the Madras market, and seen it north-east of Calcutta on the banks of large rivers. It associates in moderate-sized flocks, and is somewhat wary." It is distributed throughout Malasia, having been obtained in Java by Horsfield, while the Leyden Museum contains examples from Borneo, Timor, Gilolo, and New Guinea. According to Mr. Gould it occurs both in Eastern and Western Australia.

In Africa it only occurs as a winter visitant. Captain Shelley has several examples procured in Egypt; and Lichtenstein records a specimen from Arabia. Petherick obtained it in Kordofan;

and von Heuglin states that it is found along the shores of the Red Sea and the Gulf of Aden in winter. Daubeny shot it at Arkeko; and further down on the eastern coast it has been obtained by Dr. John Kirk on the island of Zanzibar. Captain Sperling also remarks that he found it "common at Zanzibar, where he procured young birds in November." Sganzin met with it in Madagascar, and Mr. Edward Newton has included it among the birds of the Seychelles and Mauritius. Mr. Layard in his 'Birds of South Africa,' states:—"I have never seen the Grey Plover in the summer or breeding-plumage in this country; but many specimens in winter dress have occurred to me both here and on the east coast of Africa, where, as far as $1\frac{1}{2}^{\circ}$ south, I shot it in considerable numbers." Our friend Mr. J. H. Gurney informs us that the Grey Plover is common on the Damara coast, and also occurs in Trans Vaal and Northern Natal. One specimen from Damara Land was in partly breeding-plumage. On the west coast of Africa it has been obtained on the Muni river by Du Chaillu; and Pel sent home specimens from the Gold Coast which he had shot there in February and December. Verreaux also has received it from Senegambia.

Reinhardt says that it "occurs in very limited numbers" in Greenland; and Audubon has noted that he found it breeding in North America. Captain Blakiston writes:—"I fancied this bird was confined to Hudson's Bay, whence I have received a specimen, as well as Mr. Murray; and one is recorded thence in the 'Fauna Boreali-Americana;' but I now observe that it has been found by Mr. Ross on the Mackenzie, but it is rare." Professor Baird remarks that, "this almost universally distributed species occurs on the sandy flats of Chiapam, and is usually seen in company with the flocks of *Tringæ* and the like;" and Dresser in his paper on the 'Birds of Southern Texas' gives the following note:—"On the 6th of September 1863, at the salt-ponds in the sandy desert between the San Colorado and King's Rancho, I shot one specimen (which was well marked with black), and killed another on Galveston Island on the 26th of May 1864; but I skinned neither of them." Mr. G. H. White obtained it in the vicinity of the city of Mexico; and Mr. Osbert Salvin, writing on the Sea-birds and Waders of the Pacific coast of Guatemala, says, "Grey Plovers were occasionally seen, their unmistakable black axillary feathers enabling one to distinguish the species at a distance." It has also been obtained in the Bahamas by the late Mr. Bryant; and Lieut. Wedderburn obtained it in the Bermudas in September. In Jamaica it likewise occurs, and, according to Gundlach, inhabits Cuba from August to April. Léautaud found it in Trinidad in August and October.

A very good account of the habits of the Grey Plover has been given by Baron Droste-Hülshoff in his work on the Birds of Borkum:—"It passes here late in May, and again occurs on the southward migration in August and early in September. It is a fine lively bird, and carries its head and body erect, and its breast thrown forward. In running backwards it resembles the Golden Plover; and before flying, like that bird, it always lifts the wings high above its head. Its flight is peculiarly swift, more so than that of most other shore-birds. It flies off in a straight line, now approaching and now leaving the ground in easy dips. It extends the wings far, and flies with powerful strokes. On the wing it appears thick-headed, slight in form and with very pointed wings, and these appear bowed into a sickle-shape. The general colour appears whitish with two black patches, the black axillaries showing very clearly. It has a peculiar appearance; and an eye but little experienced can easily distinguish it. Its call-note

is a sharp whistle, *Tlj-e-ih*, which cannot be mistaken for the *Tliii* of the Golden Plover; the final note is very softly sounded. On the wing they repeat this note with long pauses; and sitting they call to each other and repeat the latter portion when any of their own species settle down beside them. At sunset they are most uneasy, and fly about, calling continually, late into the night. They repeat the call-note so quickly that it becomes a regular 'jodel' call; and when a couple quarreled, they called loudly *Tljii Tljii*. It is a very watchful and shy bird, and carefully avoids every suspicious-looking mound, seldom approaching a place where the sportsman is hid; it is therefore the sentinel of other shore-birds, which it warns by its sudden flight and loud alarm-note; and its fondness of company renders it their leader. . . . In the autumn it frequents the shores only, going on to the grass when driven thither by high tides; but, peculiarly enough, in the spring it frequents the water-meadows and seldom visits the shore. I did not, however, see any by the fresh water; but they generally lived on places far from water, scarcely damp, and covered with short grass. Late in the year it is also found on the muddy shores of the rivulets far out on the shore at ebb-tide, on flat places where numerous shore-worms are found, and picks up small worms here, picking about amongst the sea-herbage. It also picks out the shore-worms. On the edge of the water it seeks its food in the foam, and, like the Sandpipers, wades up to its belly in the water."

Lord Lilford, in his well-known essay on the ornithology of Corfu and Epirus, notices the following remarkable fact in connexion with the present species:—"This bird has a curious habit which I do not recollect to have seen mentioned in any work on ornithology, of throwing somersaults in the air, in the same manner as the Tumbler Pigeon and Roller. I noticed this particularly in March 1857, on the Gulf of Arta, about the mouth of the Luro river, where a few of this species are generally to be seen."

The egg of the Grey Plover was for a long time a desideratum in the best European collections; and even now authentic specimens are exceedingly rare. We therefore make no apology for giving all the observations published on the breeding of the bird, which we have met with. Von Middendorff, to whom we are indebted for our knowledge of the bird's nesting-habits, gives the following account:—"Earlier than the 25th of May none of these birds were observed on the Boganida, and on the 26th of June the females were sitting there on their nests, which were formed by collecting together dry leaves and grasses, and in which were four eggs. As nothing reliable is known about these latter, and I have in vain looked for an illustration of them in Thienemann's new work, I give the following particulars respecting them. In form the eggs of the Grey Plover agree with those of the Lapwing (*Vanellus cristatus*) and the Dotterel (*Charadrius morinellus*), but are larger than either, though in this respect the eggs of this bird differ considerably. The average size is about 54 millims. in length by 36 millims. in largest diameter. The largest eggs I have seen were about 2 millims. longer; on the other hand, the smallest were 48 millims. long by 36 millims. in diameter. Sometimes the smallest eggs of the Grey Plover are exceeded in length by those of the Golden Plover; but the latter are invariably narrower, not exceeding 33 millims. in breadth; nor does the colour offer any distinctive mark. The ground-colour is sometimes yellowish grey, sometimes brownish yellow; and the dark brown spots are distributed on the egg as on the eggs of the Golden Plover.

"The females which I saw had, even in the fullest summer plumage, an irregular white stripe

extending from the median line over the black of the breast and abdomen, which distinguished them from the males."

Professor Newton, when exhibiting a specimen of the egg at a Meeting of the Zoological Society, makes the following remarks:—"The egg of this cosmopolitan species has been confessedly one of the rarest and most sought for by collectors. It is now well known that Sir John Richardson must have been mistaken in his assertion ('F. B.-A.' ii. p. 370) that the Grey Plover breeds in Pennsylvania." He also adds:—"The specimen which I now have the pleasure of exhibiting was sent me a few months ago by my friend Dr. Baldamus, who received it from Councillor von Middendorff. This intrepid traveller states ('Sib. Reise,' II. ii. p. 290) that the bird breeds on the Byrrangá Mountains, in latitude 74° N., as well as on the Boganida, in latitude 71° N., and that it is much less common there than *Charadrius pluvialis*. He found a nest on June 26th with four eggs, which he describes with some minuteness, besides figuring an example (t. 19. f. 1). They greatly resemble in character those of the Lapwing (*Vanellus cristatus*) and Dotterel (*Eudromias morinellus*), but are much larger. My specimen is, I believe, a good deal under the average size; and yet it is more bulky than any Golden Plover's that I have, thereby confirming Von Middendorff's remark. With it Dr. Baldamus sent me a memorandum, bearing the autograph of the discoverer, as follows:—'*Squatarola helvetica*, $\frac{i}{vii}$, 43, fluv. Taimyr, 74°.—Middff.'"

In Dresser's collection is one egg of this bird obtained by Dr. Middendorff on the Boganida on the 30th of June, and by him deposited, with several others, in the Petersburg Museum, whence Dresser procured it. In shape this egg is rather more elongated and tapers sharper at the smaller end than eggs of *Charadrius pluvialis*; and the markings are more irregular and fantastical, there being no distinct almost round spots, so common in the Golden Plover's. The ground-colour is dull clay-brown, like that in many Golden-Plovers' eggs; and the markings, which are distributed over the surface of the egg, but collect together somewhat at the larger end, are dark blackish brown, and irregular and distorted in shape. Here and there a few purplish underlying shell-markings show themselves. It measures $2\frac{3}{40}$ by $1\frac{16}{40}$ inch.

Mr. Swinhoe once kept a Grey Plover in confinement; and this bird never assumed the black dress while in captivity, but retained its winter plumage all the summer through.

The descriptions and figures of the adult bird in breeding-plumage, and the young in autumn, are taken from specimens in our collection, shot in Pagham Harbour, while the winter dress is described from a fine specimen killed at Blakeney by Mr. Buxton and now in the possession of Mr. J. H. Gurney, Jun. This bird is figured in the last-named stage of plumage, on the plate of the Eastern Golden Plover.

In conclusion, we must acknowledge the great assistance we have derived from the article on the Grey Plover in the Vögel Ost-Afrika's of Drs. Finsch and Hartlaub, where the synonymy is most thoroughly and completely worked out.

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

*a, b, c, d, e, f, g, h.* Pagham, Sussex (*A. Grant*). *i.* Christiania (*A. Collett*). *j.* Denmark (*A. Benzon*). *k.* Germany (*W. Schlüter*). *l.* Barcelona, Spain (*H. E. D.*). *m.* New Jersey (*J. Krider*). *n.* Mexico (*G. H. White*).

*E Mus. J. H. Gurney, jun.*

*a.* Greatham, Durham (*J. H. G.*). *b.* Yarmouth (*Gunn*). *c.* Wells (*Gunn*). *d.* Blakeney (*Buxton*). *e.* Worthing (*Wells*). *f.* St. Petersburg (*J. H. G.*).

*E Mus. H. B. Tristram.*

*a.* Navarino, Greece (*H. B. T.*). *b.* Pagham, Sussex (*J. E. Harting*).

*E Mus. Howard Saunders.*

*a, b, c.* Malaga (*H. S.*).

*E Mus. Lord Lilford.*

*a.* Marisma, Guadalquivir, near Seville (*L.*).




J.G Keulemans lith

M & N. Hanhart imp

1. SQUATAROLA HELVETICA.
2. CHARADRIUS PLUVIALIS.

# SQUATAROLA HELVETICA.

## APPENDIX A.

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When the article on this species was issued, in an early part of the present work, all the information that could be obtained respecting its nidification consisted of the observations made by Von Middendorff during his journey to Northern Siberia; and it was not then supposed that the Grey Plover bred anywhere within the limits of the Western Palæarctic Region. Amongst the interesting discoveries, however, made last spring (1875) by Messrs. Harvie-Brown and Seebohm, who brought so many rarities back from the Petchora river, in Northern Russia in Europe, not the least important is that of the nidification of the present species, which they found breeding in tolerable numbers; and I am indebted to the latter of these gentlemen for the following interesting notes:—"When Harvie-Brown and I planned our expedition to the Petchora we thought it was within the range of possibility that we might return with eggs of the Grey Plover. As the migratory birds began to arrive at Ust Zylma we kept a sharp look-out for the Grey Plover as one of the specialities of our trip. On the 17th May, the second day of summer, the Golden Plover arrived. We carefully examined every flock of these birds that passed us, and never lost an opportunity of shooting a bird; but as all the migratory birds arrived one after another without any signs of the Grey Plover, we gradually gave up our hope of obtaining their eggs. Nor did our journey down the river do much to reassure us. At Pustazursk (or, as the Russians on the Petchora call it, Gorodok, or *the* town) we found the Golden Plover, but no signs of the Grey Plover. One fact, however, encouraged us. In the delta of the Petchora we found several species of birds in considerable numbers, and unquestionably migratory birds, which we had not seen in Ust Zylma, and which could not possibly have passed through in such numbers without our having seen something of them. It was perfectly obvious that Ust Zylma was somewhat out of the line of migration, and that the majority of birds intending to breed on the tundra would only follow the valley of the Petchora as far as the Ussa, and would then strike direct across the comparatively flat country to their breeding-places. We ascertained afterwards, by reference to a work published by the Museum at Kasan, that small flocks of Grey Plovers are seen in most years in May and September near that town. The Grey Plovers wintering on the shores of the Mediterranean would probably leave by way of the Black Sea, cross by the Sea of Azov to the Volga near Sarepta, follow the Volga to Kasan, and thence take the valley of the Kama through Perm to Tcherdin, close to the source of the Petchora.

"We arrived at Alexievka on the evening of the 19th June, and on the 22nd crossed the river to the land of promise, the Aarka Ya of the Samoyedes, the Bolshai Semlia of the Russians, the mysterious tundra (a sort of ornithological Cathay) of our little party. We mustered seven altogether—our two selves, our interpreter Piottuch, and our crew of four, two Russians, a Samoyede, and a halfbreed. It was a bright warm day; the wind had dropped; and it was too early in the season for the mosquitoes to be troublesome. The tundra forms the east bank of the Petchora; and we had to climb up a steep cliff (perhaps 60 feet high), a crumbling slope of

clay-earth, sand, gravel, turf, but no rock. We then looked over a gently rolling prairie country, stretching away to a flat plain, beyond which was a range of low rounded hills, some eight or ten miles off. It was in fact a moor with here and there a large flat bog, and everywhere abundance of lakes. For seven or eight months in the year it will be covered with from two to three feet of snow. Snow was still lying in large patches in the more sheltered recesses of the steep river-banks; and on one of the lakes a large floe of ice, six inches thick, was still unmelted. The vegetation on the dry parts of the tundra was chiefly carices, moss, and lichen, of which the familiar reindeer-moss was especially abundant. In some places there were abundance of cranberries with last year's fruit still eatable, preserved by the frost and snow of winter. Here and there we met with a dwarf shrub not unlike a rhododendron, with a white flower and aromatic-scented leaves (*Ledum palustre*), a heath-like plant with a pale red flower (*Andromeda polifolia*), and dwarf birch (*Betula nana*) running on the ground almost like ivy. The flat boggy places had evidently been shallow lakes a few weeks ago after the sudden thaw, and were now black bog, in the middle grown over with yellow-green moss, and carices towards the edge. They were separated from each other by tussocky ridges of moor, which intersected the plain like the veins on the rind of a melon. We found no difficulty in going where we liked; our india-rubber waterproofs were all-sufficient. We crossed the wettest bogs with impunity, seldom sinking more than a foot before coming upon a good foundation, a solid pavement of ice. Birds were but thinly scattered over the ground; but there were sufficient to keep our curiosity on the *qui vive*. The commonest bird was the Lapland Bunting; and we took two of their nests in the tussocky ridges between the little bogs. The next commonest bird was the Red-throated Pipit; and we took two of their nests in similar positions. As we marched across the tundra we fell in with some Dunlins, and took a couple of their nests. This was encouraging. The Dunlin was a bird we had not seen at Ust Zylma, and one doubtless that migrated direct across country from Ust Ussa. We had not walked more than a couple of miles inland before we came upon a small party of Plovers. They were very wild, and we found it impossible to get within shot of them; but a distant view through our binocular almost convinced us that we had met with the Grey Plover at last. We had not walked very far before other Plovers rose; and we determined to commence a diligent search for the nest, and offered half a rouble to any of our men who should find one. Our interpreter laughed at us, and marched away into the tundra with a 'c'est impossible, Monsieur.' We appealed to our Samoyede, who stroked his beardless chin, and cautiously replied 'mōzhna.' The other men wandered aimlessly up and down; but the Samoyede tramped the ground systematically, and after more than an hour's search found a nest on one of the dry tussocky ridges intersecting the bog, containing four eggs about the size and shape of those of the Golden Plover, but more like those of the Lapwing in colour. The nest was a hollow, evidently scratched, perfectly round, somewhat deep, and containing a handful of broken slender twigs and reindeer-moss. Harvie-Brown concealed himself as well as he could behind a ridge to lay in wait for the bird returning to the nest, and after half an hour's watching shot a veritable Grey Plover. Soon afterwards another of our men found a second nest, also containing four eggs, in exactly a similar situation. Harvie-Brown took this nest also in hand, and after about an hour succeeded in shooting the female. The third nest was found by the Samoyede. This time I lay down behind a ridge some thirty yards from the nest, and

after waiting a quarter of an hour caught sight of the bird on the top of a distant tussock. Presently she ran nearer to another ridge, looked round, and then ran on to the next, until she finally came within fifty yards of where I was lying. I had just made up my mind to risk a shot when she must have caught sight of me, and flew right away. In a quarter of an hour I caught sight of her again, approaching by short stages as before, but from an opposite direction. I must have been in full sight of her. When she had approached within fifty yards of me, as near as I could guess, I fired at her with no. 4 shot and missed. I remained reclining where I was, with little hope that she would try a third time to approach the nest, and whiled away the time with watching a Buffon's Skua through my glass as it cautiously approached in my direction. Turning my head round suddenly I caught sight of the Grey Plover running towards the nest within fifty yards of me. I lifted my gun and fired again, but was so nervous that I missed her a second time. I was so vexed that I got up and walked towards the Skua, which still remained *in statu quo*. I missed a shot at it too, spent some time in a vain search for its nest, and returned to my old quarters. In ten minutes I saw the Grey Plover flying up. It took a wheel in my direction, coming almost within shot, and evidently took stock of me, and satisfied itself that I was a harmless animal practising with blank cartridge, and having no evil design upon its eggs. It alighted about fifty yards beyond the nest, and approached less timidly than before. When it came within fifty yards of me I fired this time with no. 6 shot, and laid the poor bird upon its back. As we returned to our boat Harvie-Brown found a fourth nest, and, after watching as before, secured the bird. We accidentally broke two of the eggs belonging to the third nest, but reached Alexievka at midnight with fourteen identified Grey Plover's eggs. Two sittings were quite fresh, and made us an excellent omelette for breakfast the next morning. The other two were very slightly incubated.

"From the 25th to 28th June we made an excursion to Stanavialachta, some forty versts lower down the river. The tundra here was more hilly, and we did not find any of the dead flat bog which the Grey Plover frequents; consequently we did not meet with any of these birds; but the Golden Plover was common enough, and we took two of their nests.

"On 3rd July we took advantage of a cold north-east wind, which banished the mosquitoes for a time, to cross over to the tundra again to renew our search for Grey Plover's eggs. We soon heard the note of the birds we were in search of, and saw two or three, but could not discover any signs of their having a nest. After our previous experience we decided to vary our tactics. Hitherto we had found the nests by sheer perseverance in searching, and had afterwards watched the female to the nest and shot her. We now decided to watch the female onto the nest in the first instance, and, having by this means found it, to secure the female afterwards as a further and more complete identification of the eggs. It was also perfectly obvious that the extreme care we had taken not to alarm the bird was unnecessary. Our little manœuvre of walking away from the nest in a body, leaving one behind lying flat on the ground to watch, under the impression that the bird could not count beyond three, and would think that we had all gone, was clearly so much artifice wasted. The birds were evidently determined to come back to their nests in spite of our presence; nor was there any cover to hide us if the contrary had been the case. Our care not to handle the eggs until we had secured the bird was also of no use, as we often proved afterwards. On a marshy piece of ground I shot a Reeve; and then

we struck across a very likely piece of land, little flat pieces of bog with mossy ridges between. Presently Harvie-Brown, who was in front, whistled; and as I was coming up to him I saw a Grey Plover to my left. He called out to me that he had put up a pair near where he was standing. I soon caught sight of another bird, on the ground, lifting its wings as if to attract me from its nest. It then quietly ran off; and I went to the spot—but finding nothing, lay down to watch. Harvie-Brown did the same about eighty yards off. It was not long before I caught sight of both birds at some distance. One, which I at once concluded must be the male, remained in one spot; the other was running towards me, stopping on some elevation every few yards to look round. By-and-by it flew between Harvie-Brown and me, and alighted on the other side of me. The other bird soon followed, and remained as before, apparently watching the movements of the restless bird, which I now felt sure must be the female. To this latter bird I now confined my attention, and kept it within the field of my telescope for more than half an hour. It was never still for more than a minute together; it kept running along the ground for a few yards, then ascending one of the ridges, looking round and uttering its somewhat melancholy cry. It crossed and recrossed the same ridges over and over again, and finally disappeared behind a knoll about forty yards ahead of me, and was silent. I carefully adjusted my telescope on a knoll to bear upon the place in case I lost it, and was just making up my mind to walk to the spot when I again heard its cry, and saw it running as before. The male was still *in statu quo*. The crossing and recrossing the ridge upon which my telescope was pointed then continued for another quarter of an hour, and at last the bird disappeared behind the same ridge as before. I gave her a quarter of an hour's grace, during which she was perfectly silent, and then sat up to see if Harvie-Brown was satisfied that she was on the nest. His point of sight was not so favourable as mine; and thinking I had given up the watch as hopeless, he fired off his gun as a last resource, and came up to me. As soon as he fired, both birds rose almost exactly in front of the knoll upon which my telescope pointed. Upon his arrival to learn what I had made out, I told him the nest was forty or fifty yards in front of my telescope. We fixed one of our guns pointing in the same direction, so that we could easily see it. We then skirted the intervening bog, got our exact bearings from the gun, and commenced a search. In less than a minute we found the nest with four eggs. As before, it was in a depression on a ridge between two little lakes of black bog. In returning to our boat we crossed a higher part of the tundra near the river-bank, and saw some Golden Plovers. The eggs in this, our fifth nest, were considerably incubated, which was probably the reason why one of the birds showed more anxiety to lure us away.

"The following day we crossed over again to the tundra, and spent some hours watching some Buffon's and Richardson's Skuas. We watched one of the latter birds onto her nest, with two eggs, and then turned our attention to the Grey-Plover ground. We found one of our men trying to watch one of these birds onto the nest. We lay down, one fifty yards to his right, and the other as much to his left. The birds behaved exactly as those we watched the day before. After the female had crossed and recrossed one hillock many times, and finally disappeared behind it, I made up my mind that the nest was there, and sat up. My sudden appearance alarmed the male, who flew up, showing his black axillaries very distinctly in the evening sunshine as he skimmed over my head. We then all three rose, and in less than a minute met at

the nest, which contained three eggs. I sat down to pack the eggs; and Harvie-Brown followed the male, who came up as we found the nest. Whilst I was packing the eggs and warming my hands, and talking pigeon-Russ with the man, the female came within range, and I took up my gun and shot her.

"Our seventh and eighth nests of the Grey Plover we took on the 9th of July. We set sail at noon, with a north-east wind, to visit the tundra eight or ten versts higher up the great river. For some distance before we landed the coast was very flat, with willows down to the water's edge. Amongst these dwarf trees we repeatedly heard the Petchora Pipit (*Anthus seebohmi*) and the Siberian Chiffchaff (*Phylloscopus tristis*). As soon as we got beyond the willows we landed on the tundra, and started in pursuit of a large flock of Buffon's Skuas, but were soon stopped by a pair of Grey Plovers, which showed by their actions that we were near the nest. We lay down as before, forty or fifty yards apart, and watched the birds. They ran about, up and down, and all round us; and at the end of half an hour we were no wiser than at first. There was evidently something wrong. Harvie-Brown then shouted to me, 'Have you marked the nest?' I replied by walking up to him and comparing notes. We then watched together for another half-hour with exactly the same result. I suggested that we must be so near the nest that the bird dare not come on, and advised that we should retreat to the next ridge, which we accordingly did. We had not done so many minutes before the female made her way onto the ridge where we had been lying. She then ran along the top of the ridge, passed the place where we had been stationed, and came down the ridge onto the flat bog towards where we then were. I whispered, 'She is actually crossing over to us.' Suddenly she stopped, lifted her wings and settled down on the ground. We both whispered, almost in the same breath, 'She is on the nest.' I added, 'I saw her lift her wings as she settled onto the eggs.' Harvie-Brown replied, 'So did I,' and added, 'I can't hold out any longer against the mosquitoes.' I replied, 'I am perfectly satisfied; she is within range, take her.' Harvie-Brown lifted his gun to his shoulder. She ran off the nest to the top of the ridge and stood there until Harvie-Brown tumbled her over. We then walked up to the nest, the first we had seen on the flat. The eggs were quite fresh, or nearly so; and the nest must have been made nearly a fortnight later than those we had previously taken. During that time the bogs had become much dryer, so that we could cross them without much difficulty; and this would probably be the reason why this nest was placed lower down. The eggs had all the appearance of a second laying, being less blotched than usual, one of them remarkably so. It is worth noticing that whilst we were watchiug in our first position, very near the nest, the birds were almost quite silent, and did not call to each other as they usually do.

"After carefully packing the eggs, we walked on, and speedily started another pair. This time we lay down together, as near as we could tell, on the spot from which the birds rose, which seems to be generally from forty to fifty yards from the nest. The clouds of mosquitoes formed such a mist on the tundra that we had some difficulty in marking our birds; but by raking the horizon with a binocular, and getting well stung through our veils in the process, we soon found the female, and watched her onto a ridge just opposite to us. She soon settled down; and within a quarter of an hour after we had lain down we were both perfectly satisfied that she was on the nest. We gave her a few minutes' grace, and then walked up to the nest, without

making any effort to shoot the bird, having perfectly identified her, and being almost tired out by the mosquitoes. The eggs in this nest were considerably incubated. The nest was placed, as before, in a hollow on a ridge. The ground on this ridge was not so mossy as usual, and there was much bare brown turf to be seen. Whether this had any thing to do with the colour of the eggs it is difficult to say; but the fact is that these eggs are quite brown in ground-colour.

"Our ninth nest of the Grey Plover we took on the 12th of July. A stiff warm gale from the east, with occasionally a smart shower of rain, kept the air clear of mosquitoes in the morning. In the afternoon the wind fell, and the mosquitoes were as bad as ever; but we were too busy to heed them much. At eleven we crossed to the tundra. We soon came upon a pair of Grey Plovers, which rose a couple of hundred yards ahead of us, their wings glittering in a gleam of sunshine after a smart shower. These birds have frequently a very curious flight as they rise from the nest, tossing their wings up in the air, reminding one somewhat of the actions of a Tumbler Pigeon. We lay down, as near as we could tell, near the spot from which they rose, and were somewhat puzzled at their behaviour. The male seemed as much, if not more anxious than the female, running about as much as she did, continually crying, and often coming very near us, and trying to attract our attention by pretending to be lame. The female rarely uttered a note. We suppose this must have been because one of us was too near the nest. Harvie-Brown moved his post of observation after we had spent some time without being able to discover any thing; and then the female behaved as usual, and I soon marked the position of the nest. We walked straight up to it, and found the four eggs chipped ready for hatching. We had no difficulty in shooting both birds, and afterwards hatched out two of the eggs, obtaining a couple of good specimens of young in down. With a little practice this mode of finding birds' nests becomes almost a certainty. One has first to be quite sure which is the male and which the female. When the birds are near enough, and one can compare them together, the greater blackness of the breast of the male is sufficient to distinguish him; but we found that the females varied considerably in this respect, and that it was better to notice the habits of the birds. The female generally comes first to the nest, but she comes less conspicuously. She generally makes her appearance at a considerable distance, on some ridge of mossy land. When she has looked round, she runs quickly to the next ridge and looks round again, generally calling to the male with a single note. The male seldom replies; but when he does so it is generally with a double note. When the female has stopped and looked round many times, then the male thinks it worth while to move; but more often than not he joins the female by flying up to her. The female very seldom takes wing. She is very cautious, and, if she is not satisfied that all is safe, will pass and repass the nest several times before she finally settles upon it. The female rarely remains upon one post of observation long; but the male often remains for ten minutes or more upon one tussock of a ridge, watching the movements of the female.

"We walked some distance before we came upon a second pair; but at length we heard the well-known cry, and got into position. We spent nearly two hours over this nest, and were quite at sea at the end of the time. We changed our position several times, but to no purpose. The female went here and there and everywhere, as much as to say, 'I'm not going onto the nest as long as you are so near.' At last the mosquitoes fairly tired us out, and we gave up the watching game and commenced a search. At last we found out the secret of the bird's behaviour.

We picked up some broken egg-shells, and concluded at once that the bird had young. We tried to find them, but in vain. These two hours, however, were not wasted. The birds came nearer to me than they had ever done before. I often watched them at a distance of not more than ten yards, and was able to hear their notes more distinctly. The note most frequently used is a single plaintive whistle, *köp*, long drawn out, the *ö* pronounced as in German, and the consonants scarcely sounded. This I am almost sure is the alarm-note. It is principally uttered by the female when she stops and looks round and sees something that she disapproves of. If the male shows any anxiety about the nest, which he seems to do more and more as incubation progresses, he also utters the same note. The double note, *kl-ee* or *kleep*, the *kl* dwelt upon so as to give it the value of a separate syllable, is also uttered by both birds. It is evidently their call-note. I have seen the female, when she has been running away from the male, turn sharp round and look towards him when he has uttered this note, exactly as any one might do who heard his name called. Whilst we were watching this pair of birds a couple of other Grey Plovers came up, and called as they flew past. The male answered the call and flew towards them. On the wing this whistle is lengthened out to three notes. I had some difficulty in catching this note exactly. It is not so often uttered as the two others I have mentioned, and is generally heard when you least expect it; but I am almost sure it is a combination of the alarm-note with the call-note—*kl-ee-köp*. If I wanted to make a free translation from Ploverski into English, I should say that *kl-ee* means 'Hallo! old fellow,' and *köp* means 'Mind what you are about.'

"We procured our tenth nest of the Grey Plover the same afternoon. It was found by our Samoyede, who brought us three eggs and male and female shot at the nest. He accidentally broke the fourth egg. As it contained a live young bird, we placed these three eggs in our hatching-basket, where we had made a snug nest of Bean-Goose-down.

"By this time we were pretty well tired with tramping the tundra. The ceaseless persecution of the mosquitoes, and the stifling feeling caused by having to wear a veil with the thermometer above summer heat, had taxed our powers of endurance almost to the utmost; and we turned our faces resolutely towards our boat; but a most anxious pair of Grey Plovers were too great an attraction to us to be resisted. We watched them for some time, during which a pair of Ringed Dotterels persisted in obtruding themselves impertinently between us and the objects of our attention. This pair of Grey Plovers also puzzled us; and we concluded that they possibly had young, and consequently we gave up the search. We had each marked a place where we thought the nest might be; and we each of us went to satisfy ourselves that it was not there. The two places were about fifty yards apart. The birds first went up to Harvie-Brown and tried to attract him away by flying about and feigning lameness. Then they came to me and did the same. They were so demonstrative that I felt perfectly certain of finding the nest, and shot at the female. She dropped in the middle of a wet bog. I then shot the male, walked up to him, and left him with my basket and gun to struggle through the bog to pick up the female. Before I got up to her, I saw her lying on the turf on her breast with her wings slightly expanded. I was just preparing to stoop to pick her up, when she rose and flew away, apparently unhurt. I must have missed her altogether, as she was evidently only shamming to draw me away. I returned to search for the nest, and was unable to find it. Whilst I was looking

for it Harvie-Brown came up, and I gave up the search, and we again turned towards the boat. When we had got about halfway towards the spot where Harvie-Brown had been looking, I caught sight of a young Grey Plover in down, almost at my feet. Stooping down to pick it up, I saw the nest with three eggs not a yard from me. This was the last and eleventh nest of these rare birds which we found. The young in down are very yellow, speckled with black, and are admirably adapted for concealment upon the yellow-green moss on the edges of the little bogs close to which the Grey Plover seems always to choose a place for its nest.

"Our attempt to hatch the highly incubated eggs, and thus obtain specimens of young in down, was successful. We soon had five young Grey Plovers well and hearty, and saved three or four more afterwards.

"We subsequently spent a week at Dvoinik, a hundred miles lower down the Petchora, on the shores of the lagoon. Here we found the Grey Plover even more abundant than on the tundra opposite Alexievka. It frequented exactly the same description of ground. Our interpreter shot a Grey Plover from the nest, and brought us four young in down from it, evidently just hatched. This was on the 22nd of July; and two days later I caught a young Grey Plover in down, somewhat older and greyer in colour."

Mr. Seebohm has kindly sent me a specimen of the young in down of the present species, which I have figured together with the young of the Golden Plover for comparison. Although in this plumage the two species resemble each other much, yet the Grey Plover may be distinguished by its being rather less marked with yellow, especially on the back, where the markings are paler and bolder; the hind neck is marked with white; and the underparts are whiter than in the Golden Plover.

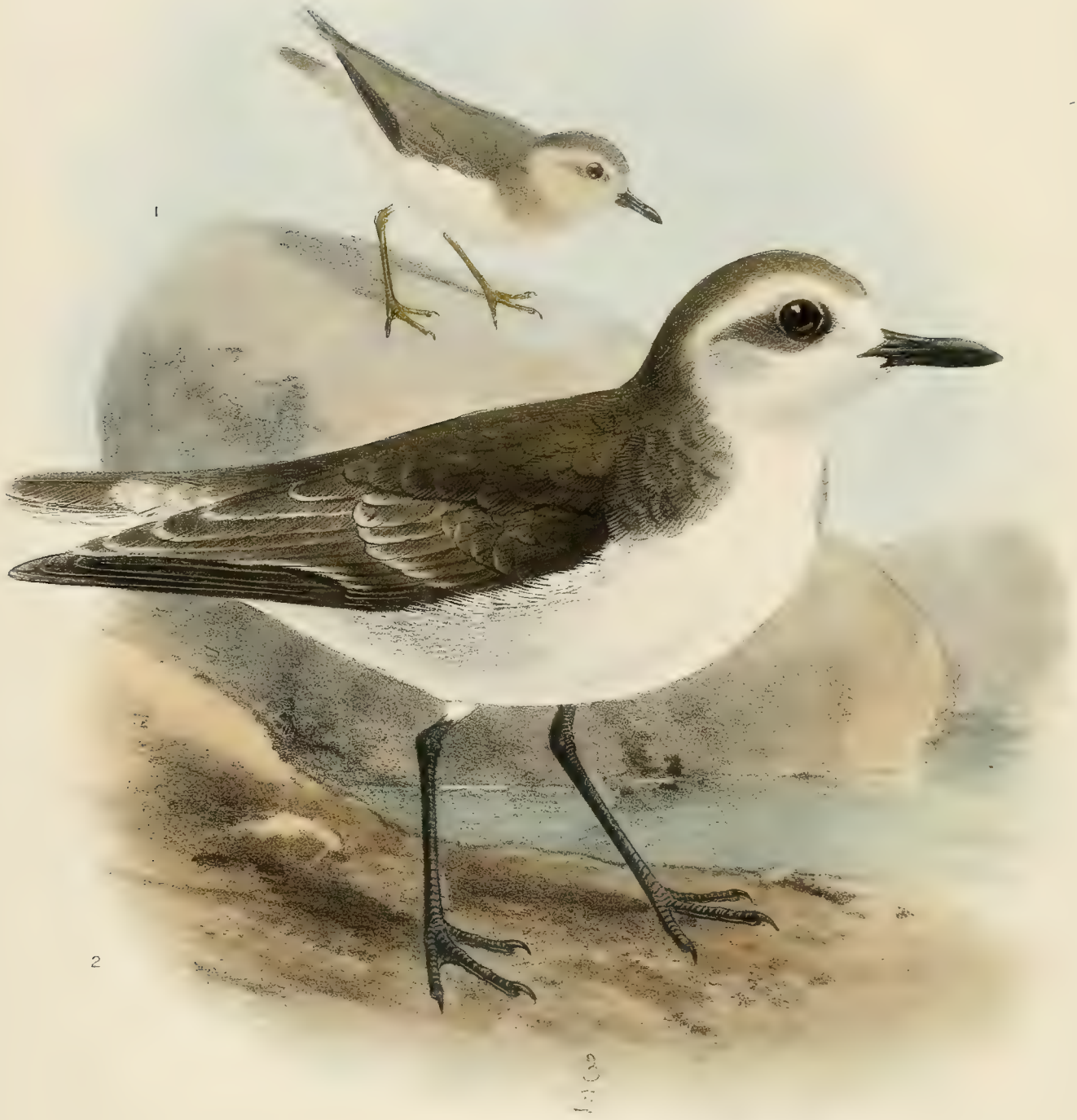
The rich series of eggs obtained by Messrs. Harvie-Brown and Seebohm, are described by the latter as being "intermediate in colour between those of the Golden Plover and the Peewit, and subject to variation, some being much browner, and others more olive, none quite as green as typical Peewit's eggs, or as orange as typical ones of the Golden Plover; but the blotching is in every respect the same, the underlying spots equally indistinct, the surface-spots generally large, especially at the larger end, but occasionally very small and scattered. In size they vary from $1\frac{36}{40}$ by $1\frac{14}{40}$ inch to $2\frac{8}{40}$ by $1\frac{16}{40}$ inch."

## Genus ÆGIALITIS.

*Pluvialis* apud Brisson, Orn. v. p. 60 (1760).
*Charadrius* apud Linnæus, Syst. Nat. p. 253 (1766).
*Ægialitis*, Boie, Isis, 1822, p. 558.
*Hiaticula* apud G. R. Gray, List of Gen. of B. p. 65 (1840).
*Ochthodromus* apud Reichenbach, Natürl. Syst. p. xviii (1851).
*Cirrepidesmus* apud Bonaparte, Compt. Rend. xliii. p. 417 (1856).
*Morinellus* apud Bonaparte, ut suprà.
*Ægialophilus* apud Gould, Hand. B. bof Austral. ii. p. 234 (1865).

The Ring-Plovers inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, five species being found in the Western Palæarctic Region. They are, as a rule, inhabitants of shingly and sandy places, either on the sea-coast or on the shores of lakes and streams; and the red-breasted species frequent the large open steppes. They feed on insects, worms, small shell-fish, &c., and pick up their food either on the shores or else further inland; I have often found them in large flocks feeding on large mud-flats on the coast. They run with great swiftness and ease, keeping the body very steady, and taking incredibly quick steps; and they fly quickly and well, their flight being even and steady. Their note is clear and loud, and is not unfrequently modulated so as to be quite melodious. Their nest is a mere depression in the ground; and they deposit four eggs, which are dull ochreous or stone-buff, spotted and blotched with blackish brown.

*Ægialitis hiaticula*, the type of the genus, has the bill much shorter than the head, rather slight, as broad as high, straight to the end of the nasal depression, then slightly raised, and decurved to the tip, which is narrow but rather obtuse; nasal groove extending beyond the centre of the bill; nostrils small, linear, subbasal; wings long, pointed, the first quill longest, the inner secondaries nearly as long as the primaries; tail rather broad, moderately long, nearly even, the two centre feathers rather elongated and pointed; legs moderately long, slender, the tibia bare for a short distance; tarsus covered with hexagonal scales; hind toe wanting, the anterior toes moderately long, slender, slightly webbed at the base; claws short, compressed, slightly curved, rather obtuse.




1. ÆGIALITIS ASIATICA
2. ÆGIALITIS GEOFFROYI.
IN WINTER PLUMAGE.



3/4

Hanhart imp

GREATER SAND-PLOVER.
ÆGIALITIS GEOFFROYI.

# ÆGIALITIS GEOFFROYI.

(GREATER SAND-PLOVER.)

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*Charadrius asiaticus*, Horsf. Trans. Linn. Soc. xiii. p. 187 (1820, nec Pall.).
*Charadrius geoffroyi*, Wagl. Syst. Av. fol. 4, p. 13. no. 19 (1827).
*Charadrius leschenaultii*, Less. Man. d'Orn. ii. p. 322 (1828).
"*Charadrius columbinus*, Hempr. & Ehr. in Mus. Berol.," Wagl. Isis, 1829, p. 650.
*Charadrius griseus*, Less. Traité d'Orn. p. 544 (1831, nec Lath.).
*Charadrius rufinus*, Blyth, Ann. & Mag. Nat. Hist. xii. p. 169 (1843).
*Hiaticula geoffroyi* (Wagl.), Rüpp. Syst. Uebers. p. 118 (1845).
*Charadrius fuscus*, Cuvier, fide Pucheran, Rev. Zool. 1851, p. 282.
*Hiaticula columbina* (Wagl.), Licht. Nomencl. Av. p. 94 (1854).
*Cirrepidesmus geoffroyi* (Wagl.), Bp. Compt. Rend. xliii. p. 417 (1856).
*Ægialites geoffroyi* (Wagl.), Heugl. Syst. Uebers. Vög. N.O.-Afr. p. 56 (1856).
*Ægialites leschenaulti* (Less.), Swinh. Proc. Zool. Soc. 1863, p. 309.
*Ochthodromus columboides*, Reichenb., fide Harting, Ibis, 1870, p. 379.

*Figuræ notabiles.*

Savigny, Ois. de l'Egypte, pl. 14. fig. 1; Kittl. Kupfert. 34. fig. 2; Harting, Ibis, 1870, pl. xi.

♂ *ad. ptil. æst.* fronte albâ, pileo et nuchâ sordidè rufescentibus, striâ frontali nigrâ: corpore suprà sordidè arenaceo-fusco: rectricibus externis albis, reliquis fusco-cinereis albo apicatis: remigibus nigricantibus, rhachibus albis, primariis intimis in pogonio externo fere ad apicem albis, secundariis albo marginatis: striâ nigrâ a rostro per oculum ductâ: pectore pallidè ferrugineo: gulâ, gutture et corpore reliquo subtùs cum axillaribus et subalaribus albis: rostro nigricante: iride fuscâ: pedibus plumbeo-cinereis.

♀ *ad. ptil. æst.* mari similis, sed sordidior: capite haud nigro notato, sed lateraliter fusco-cinereo: pectore ferrugineo, sed pallidiore.

*Ad. ptil. hiem.* pileo, nuchâ et corpore suprà fusco-cinereis: alis et caudâ sicut in ptilosi æstivali picturatis: capitis lateribus pallidè fusco-cinereis: fronte, loris, gulâ et corpore subtùs albis: pectore pallidè rufescente cervino lavato.

*Adult Male in summer* (Syria, 30th April). Forehead white; a black band passing over the fore part of the crown; rest of the crown and nape brown and pale rusty reddish; upper parts generally dull sandy brown, marked here and there with pale rufous or rusty orange on the back, outer rectrices white, the remainder ashy brownish grey, tipped narrowly with white; quills blackish, the shafts white, some of the inner primaries white on the outer web nearly to the tip; the short secondaries narrowly margined with white; a broad black streak passes from the base of the bill through the eye, covering the ear-coverts; a broad rusty-red band crosses the breast, and the upper flanks are tinged with this colour; chin, throat, and rest of the underparts white; axillaries and under wing-coverts white; bill blackish;

iris dark brown; legs plumbeous grey. Total length about 8 inches, culmen 1·0, wing 5·7, tail 2·4, tarsus 1·5.

*Adult Female in summer* (Syria). Differs from the male in lacking the black stripes over the fore crown and through the eye, these parts being brownish grey; the breast is paler rufous, and the upper parts are rather darker and duller.

*Adult Male in winter* (Egypt). Crown, nape, and upper parts generally brownish cinereous; wings and tail as in the summer; sides of the head, including a space below the eye, pale brownish cinereous; forehead, lores, chin, throat, and underparts white, the breast tinged with pale rusty buff.

The present species, again, is one that straggles into the Western Palæarctic Region from Asia, which is its true home. It is only found in the extreme eastern portion of the region embraced in the present work, as it has been met with in Syria and Palestine, but does not appear to have ever straggled into Central Europe. I possess examples from Syria; and an examination of the specimens collected by Canon Tristram in Palestine shows that all he obtained there, even those recorded by him as *Ægialitis mongolica* and *Ægialitis asiatica*, are referable to the present species. The small race of the present species (*Ægialitis mongolica*, Pall.), which differs only in size and in having a smaller bill, and which is only just specifically separable, is said by Temminck to have once occurred near St. Petersburg; but it appears to me not improbable that the specimen, if one was really obtained there, may prove to belong to *Æ. geoffroyi*.

In North-east Africa the Larger Sand-Plover is found but sparingly. Von Heuglin says that he met with it now and again in winter on the north coasts of Egypt; but, he adds, it is quite common on the Red Sea and the Gulf of Aden,—where it is doubtless a resident; for he met with it there from June to November. He says that it frequents sandbanks, coral reefs, and low shores, singly and in flocks, sometimes in company with other Waders, young birds being most frequently seen, and old males in full plumage being comparatively rare. As a rule it is a shy and a less sprightly bird than its allies; and, like them, it feeds on worms, spawn, small insects, &c. &c.; and its note is a clear flute-like whistle. It is found in places where the water is shallow and near the surf, and will wade into the water in search of food. When pursued they will run a short distance and then start off on the wing, flying low and close together, but swiftly, usually settling again at some distance. When wounded it swims with ease. He adds that he is not sure if it breeds on the shores of the Red Sea. Captain Shelley writes (B. of Egypt, p. 238) as follows:—"Although I only know of two specimens of this bird having been brought back from Egypt, one in Mr. E. C. Taylor's collection and one in my own, I do not look upon it as of rare occurrence in that country; but it is doubtless absent from most Egyptian collections on account of its habit of frequenting the sandy shores of the lakes near the sea, which are rarely visited by Nile tourists. I saw a flock of twenty of these birds on Lake Mareotis when I obtained my specimen, in the beginning of February; and towards the end of March, near Damietta, I again saw considerable numbers of a Plover, which was probably this bird; but, owing to its shyness, I was unable to procure a shot." I do not find it recorded from West Africa, except from Benguela; but it has been obtained as far south as the Cape colony; for Mr. Layard writes (B. of S. Afr. p. 299) as follows:—"I shot a single specimen (♀) of this Plover on the Salt River, near

Cape-town, in 1858, since which time no other specimen has occurred to me. On comparing it with Indian specimens received from my friend Mr. Blyth, Curator of the Asiatic Society's Museum in Calcutta, not the slightest differences can be observed. My bird was accidentally killed from a flock of Sandpipers (*Charadridæ* et *Tringæ*) feeding in the marsh." It has been obtained in Mozambique and at Zanzibar; and Mr. E. Newton, who obtained it in Madagascar, writes (Ibis, 1863, p. 455) as follows:—"On the 9th September, one specimen from a flock of about a dozen was killed by Mr. Maule on the sands between the village of Hivondrona and the mouth of the river of the same name."

In Asia it is found right across the continent to Japan. Mr. C. W. Wyatt found it in large flocks near Tor, in the peninsula of Sinai. It is not recorded from Turkestan by Dr. Severtzoff; but it is common in India. Mr. Hume (Stray Feathers, i. p. 229) says that he "met with it in thousands in the Kurrachee harbour, feeding along with its congeners, Godwits, Oystercatchers, Turnstones, and the like, on every mud-flat. It was equally common, I was told, about the mouths of the Indus, from which locality I saw a specimen, and in all suitable localities along the coast. With one exception, all the very numerous specimens I obtained were in winter plumage; but one male, shot on the 2nd February, has the broad rufous pectoral patch, rufous forehead, rufous collar round the back of the neck, and rufous tinge on many of the scapulars, indicative of the breeding-plumage." According to Dr. Jerdon (B. of India, ii. p. 639), it is "chiefly found near the sea-coast, and at the mouths of large rivers, in considerable flocks. It is found over all India in suitable spots, retiring north in April and May to breed; and it is often brought to the Calcutta market for sale, but not in such numbers as the next species. I have procured it on the east coast of Madras, and elsewhere, but never far inland. Blyth remarks that it is not till May that birds in summer plumage are procurable at Calcutta; and I never got them in the south of India in that garb. It probably occurs throughout Eastern Asia." It is found in Southern India, and also in Ceylon and the Andaman Islands. Captain Legge says (Ibis, 1875, p. 400), in his notes on the avifauna of Ceylon, "I found it at Hambantotta during the south-west monsoon in June and July. They were numerous on the great sand hills near that town, and consorted with small flocks of *Glareola lactea*. It is rare on the north-east coast, as in a tour up towards Jaffna, from Trincomalie, I met with but one example, my first (published in 'Stray Feathers,' vol. i. p. 489). Those met with at Hambantotta, out of season, and which were in winter dress, were probably all young birds, which, like the following species, remain to some extent behind for the first year on the south-east and east coasts." Mr. A. O. Hume, in his notes on the Birds of the Bay of Bengal, writes (Stray Feathers, ii. p. 288) as follows:—"We obtained this species in the neighbourhood of Port Blair, at Macpherson's Straits, Camorta, and Montschall, and saw it at several other places; but it was nowhere numerous. A specimen killed on the 8th March had begun to assume the rufous breeding-plumage; but others killed on the 25th April showed as yet no signs of this. It is almost needless to say that the specimens we obtained in the islands were entirely identical with birds procured in Sindh and other parts of India. Davison says:—'This Plover occurs, though somewhat sparingly, both at the Andamans and Nicobars. I am unable to say when they leave for their breeding-haunts; but they were with *Ægialitis mongolica*, *Tringa minuta*, *Strepsilas interpres*, and a host of others to be seen about Port Blair a few days before I left the islands in the middle of May.' We obtained specimens

throughout the cold season; and other specimens were sent us, procured in the first week in September." In his notes on the Laccadives and west coast, he adds (Stray Feathers, iv. p. 463), "It was not very uncommon at the islands. We saw, I suppose, a dozen at Cardamum and Kittan, and, I believe, saw, but failed to shoot, it at one other island."

Passing north again, I find it recorded from many parts of Eastern Asia: but it does not appear to range far north; for the Siberian explorers do not include it. It was not obtained by Dr. Henderson on his expedition to Yarkand; for he only includes *Ægialitis mongolica* in his ornithological notes. It is found in China, though not included by Colonel Prjevalsky in his list of birds occurring in Chinese Mongolia; and Mr. Whitely has obtained it in Japan. Mr. Swinhoe says that he obtained it at Amoy, and has seen it from Hongkong; and on the shores of Formosa it was abundant, and it appears probable that it breeds there. From here it ranges southward to Australia. Cuming records it from the Philippines; and M. Godeffroy has received it from the Pelew Islands. It has been obtained in Java, Borneo, and Sumatra; and Lord Tweeddale received it (Ibis, 1877, p. 322) from Lampong, in South-east Sumatra; Hoedt records it from Ceram, Foster from Amboyna, Bernstein from Halmahera, Batchian, Ternate, and Morotai, Wallace from the Aru Islands, Solomon Müller from New Guinea; and Mr. Harting states (Ibis, 1870, p. 383) that he has seen skins in winter plumage from Cape York, in the collection of Mr. Gould.

So far as I can ascertain, nothing definite is known respecting the breeding-habits of the present species; and its eggs are unknown. In habits it is said to assimilate tolerably closely to the Ring-Plover; but I find, comparatively speaking, but little on record respecting its general habits beyond what I have given above.

Besides the present species there is in Asia another very closely allied one (*Ægialitis mongolica*), which differs only in size, being much smaller, and especially in having a smaller bill and shorter tarsus. A specimen, in full summer plumage, in my collection, from Swatow, in China, measures—culmen 0·75, wing 5·28, tail 2·2, tarsus 1·2.

The specimens figured are the adult pair above described, in full summer dress, and on the second Plate, together with *Ægialitis asiatica*, in winter dress, the present species is also figured in the same stage of plumage.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀, *b*, ♀. Nahr el Kebir, Syria, May 16th, 1877 (*W. Schlüter*). *c*, ♂. Nahr el Kebir, April 30th (*W. Schlüter*).

*E Mus. H. B. Tristram.*

*a*, ♀. Syr Darya, Turkestan, January 1858. *b*, ♀. Plain of Acre, December 9th, 1863. *c*. Beersheba, February 1864. *d*, ♀. Brook Kishon, Palestine, March 19th, 1864 (*H. B. T.*).



CASPIAN PLOVER
ÆCIALITIS ASIATICA

# ÆGIALITIS ASIATICA.

(CASPIAN PLOVER.)

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*Charadrius asiaticus*, Pall. Reise Russ. ii. p. 715 (1773).
*Charadrius caspius*, Pallas, Zoogr. Rosso-As. ii. p. 136, tab. lviii (1811).
*Charadrius jugularis*, Wagl. Syst. Av. fol. 5, p. 5. no. 39 (1827).
*Eudromias asiaticus* (Pall.), Keys. & Blas. Wirbelth. Eur. p 70 (1840).
*Charadrius damarensis*, Strickl. Contrib. Orn. 1851, p. 148.
*Charadrius gigas*, L. Brehm, Naumannia, 1855, v. p. 289.
*Eudromias asiatica* (Pall.), C. L. Brehm, Vogelfang, p. 281 (1855
*Ægialitis gigas*, C. L. Brehm, Vogelfang, p. 283 (1855).
*Morinellus caspius* (Pall.), Bp. Compt. Rend. xliii. p. 417 (1856).
*Morinellus caspius* (Pall.), Bp. Cat. Parzud. p. 14 (1856).
*Morinellus asiaticus* (Pall.), Degl. & Gerbe, Orn. Eur. ii. p. 132 (1867).

*Figuræ notabiles.*

Pall. Zoogr. Rosso-As. tab. lviii.; Naum. Vög. Deutschl. taf. 386. figs. 1, 2; Harting, Ibis, 1870, pl. v.

♂ *ad. ptil. æst.* suprà fuscus, plumis nonnullis in dorso et nuchâ ochraceo-fusco apicatis, scapularibus ochraceo marginatis: remigibus nigro-fuscis: caudâ saturatè fuscâ, rectricibus fere omnibus albo apicatis: fronte, striâ magnâ superciliari, loris et regione suboculari, mento et gulâ albis: gutture imo et pectore ferrugineis, in parte imâ nigro marginatis: corpore reliquo subtùs et axillaribus albis: rostro nigricante: pedibus ochraceis: iride fuscâ.

♀ *ad. ptil. æst.* mari similis, sed pallidior, nec pectore et gutture imo ferrugineis, sed griseo-fuscis vix rufescenti tinctis.

*Ad. ptil. hiem.* feminæ similis, sed pectore pallidiore et grisescentiore.

*Juv.* corpore suprà sicut in ptilosi hiemali picturato, sed plumis ochraceo-cervino vel albo-cervino marginatis, fronte et striâ superciliari cervino lavatis, pectore pallidè griseo-cervino.

*Pull.* pileo et corpore suprà cervino-albis vix rufescenti-cervino lavatis et nigro marmoratis: fronte, capitis lateribus et corpore subtùs albis.

*Adult Male in summer* (Kirghis steppes, June). Upper parts generally hair-brown, a few of the feathers on the back and nape tipped with ochreous brown; scapulars margined with ochreous; quills blackish brown; tail dark hair-brown, most of the feathers tipped with white; forehead, a broad streak over the eye, sides of the head before and below the eye, chin, and throat pure white; lower throat and upper breast rich rust-red, forming a broad pectoral band, bordered below with black; rest of the underparts and axillaries pure white; bill blackish; legs ochreous yellow; iris dark yellow. Total length about 7·5 inches, culmen 1·0, wing 5·62, tail 2·1, tarsus 1·6.

*Adult Female in summer* (Kirghis steppes, June). Differs from the male in being rather paler in colour, in

lacking the rufous pectoral band, this part being greyish brown, slightly tinged with reddish; and the white on the head and throat covers a rather smaller area.

*Adult in winter* (Transvaal). Resembles the female in summer; but the pectoral band is much paler and greyer, and gradually merges into the white above and below.

*Young of the year* (Kirghis steppes, 2nd July). Upper parts as in the winter dress, but all the feathers margined with warm ochreous buff or buffy white; forehead and the superciliary stripe slightly washed with buff; pectoral band very indistinct, and buffy grey in colour; legs (judging from the dried skin) dark greyish, and not ochreous.

*Young in down* (Kirghis steppes, June). Crown and upper parts generally buffy white, slightly tinged with rufous buff, and richly mottled with black; hind neck scarcely mottled; forehead, sides of the head, and entire underparts white.

The present species inhabits Western Asia, straggling rarely into the Western Palæarctic Region; and in the winter season it is found in Africa as far south as the Cape of Good Hope. It has occurred twice on Heligoland—a young bird in November 1850, and an adult male in full summer plumage on the 19th May 1859, both specimens being still in the well-known collection of Mr. Gätke, where they were lately examined and identified by Mr. Seebohm as belonging to the present species. According to Professor von Nordmann a single example was procured near Odessa in April 1836; and it has been recorded from Palestine by Canon Tristram: but this latter statement is evidently an error; for this gentleman's specimens have been sent to me for examination, and there is certainly not a single one of the present species amongst them; but as it is so very common near the Caspian, it may not improbably straggle into Palestine. It is stated by the Russian authors to occur commonly in the Kirghis steppes. Pallas records it from the shores of the Caspian; De Filippi obtained it at Enzeli; and Dr. Severtzoff states that it breeds throughout Turkestan. But it does not appear to range far east into Asia. It is not recorded by any of the Siberian or Indian authors; and though Mr. Harting states (Ibis, 1870, p. 207) that it strays into Northern China, I cannot but think that this must be an error; for Mr. Swinhoe does not include it in his list of the birds of China published in the Proc. Zool. Soc. May 1871; nor is it included by either Colonel Prjevalsky or MM. David and Oustalet. The species found in Eastern Asia generally, *Ægialitis vereda*, Gould, P. Z. S. 1848, p. 38, which appears to be common in China and Japan, though tolerably closely allied to the present species, is readily distinguishable by its larger size, larger and stouter bill, longer wing, and smoke-grey axillaries.

The present species is found in North-east Africa. Von Heuglin states (Orn. N.O.-Afr. p. 1019) that he now and again saw small flocks in the winter on the north coast of Egypt and in the Gulf of Suez, which he believes were composed of this species, and in the swamps of East Kordofan, on the Lower, White, and Blue Nile; and on the shores of Lake Tana, in Abyssinia, he met with it in April and May in full summer plumage, and in the autumn in immature dress. Mr. Blanford also says that he shot examples at Rairo, in Habab, in August, when they were in flocks on open grassy ground.

I do not find it recorded from North-west Africa; but Mr. C. J. Andersson records it from Damara Land, and says (B. of Damara L. p. 271) that small flocks may at times be seen, but it

is very shy and never common. All the specimens he obtained were procured at Objimbinque. Verreaux records it from Orange River, and Professor Barboza du Bocage (J. f. O. 1876, p. 295) from Rio Bengo, Angola. Mr. E. L. Layard writes respecting this species (B. of S. Afr. p. 299) as follows, viz.:—"Mr. Arnot, who forwarded the only three specimens that have reached me, writes, 'Found together in flocks of fifteen or twenty, very far away from water. They are scarce, and I only see them after showers of rain, which bring out small coleoptera and animal life of that sort, on which these birds seem to feed, and get enormously fat.' Procured near Colesberg." Mr. Ayres, who obtained it in the Transvaal, says (Ibis, 1871, p. 263), "One day as I was trudging down to the river to have an afternoon's fishing, I found four of these Plovers on the open flats outside Potchefstroom. They had somewhat the appearance of Burchell's Courser when on the ground, but did not run so fast. They ran and then suddenly stopped, with their bodies horizontal ready for flight, and, being much the colour of the ground, were not easily seen. They uttered a short 'chuck' whilst rising. I bagged two at one shot. On a subsequent occasion I saw two others which I did not obtain."

I find but little on record respecting the habits of the present species, which appears to approach much more closely to the Ring-Plovers than to the Dotterel. Mr. Harting unites it generically with the latter; but, as I have lately ascertained, he is wrong in so doing. *Eudromias morinellus*, which is the type of that genus, has a very peculiar and characteristic sternum; and when I exhibited the egg of the present species at a meeting of the Zoological Society in 1875 I stated (P. Z. S. 1875, p. 98) that I had grave doubts as to whether this bird was a true Dotterel. After considerable trouble I have now succeeded in obtaining a skeleton of *Ægialitis asiatica*; and Professor Newton, to whom I gave it for examination and comparison, informs me that the sternum differs greatly from that of *Eudromias morinellus*, and approaches closely to that of *Ægialitis hiaticula*, being therefore that of a true *Ægialitis*.

I find but little on record respecting the habits of the present species; and until quite lately its eggs were unknown. I was fortunate enough to procure an egg from the Kirghis steppes through Mr. Schlüter, and have since obtained the young in down, which I have figured. The egg is oval in shape, tapering somewhat towards one end, and measures 1·25 by 1·07 inch. It has more the character of a Ring-Plover's egg than that of a Dotterel, the spots being less blotchy than in the eggs of this latter and smaller, and it is darker and more green in tinge of ground-colour. It is warm buff with a faint greenish tinge, the spots being nearly black.

A very good figure of this Plover is given by Mr. Harting (*l. c.*); but he figures it there with lead-grey legs, which is certainly an error; and I may also remark that his specimen has the upper parts much darker than the one I have figured and described.

The specimens figured are:—on the one Plate the adult male and female in summer dress; and on the second Plate, with *Ægialitis geoffroyi* the present species in winter dress is figured.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀, *c*, *pull.* Kirghis steppes, June. *d*, *juv.* Kirghis steppes, July 2nd, 1877 (*W. Schlüter*). *e*, *f*. Transvaal (*Ayres*).



$\frac{4}{5}$

J.G.Keulemans lith

M&N.Hanhart imp

KENTISH PLOVER.

ÆGIALITIS CANTIANA.

# ÆGIALITIS CANTIANA.

(KENTISH PLOVER.)

?*Charadrius alexandrinus*, Hasselq. It. Palest. p. 255. no. 30 (1757).
?*Charadrius alexandrinus*, Linn. Syst. Nat. i. p. 253 (1766, ex Hasselq.).
*Charadrius cantianus*, Lath. Ind. Orn. Suppl. p. 66 (1801).
*Charadrius albifrons*, Wolf & Meyer, Vög. Deutschl. Heft 15 (1805).
*Charadrius littoralis*, Bechst. Naturg. Vög. Deutschl. ed. 2, iv. p. 430 (1809).
*Ægialitis cantianus* (Lath.), Boie, Isis, 1822, p. 558.
*Ægialitis albifrons* (Meyer), C. L. Brehm, Vög. Dutschl. p. 551 (1831).
*Ægialitis albigularis*, C. L. Brehm, op. cit. p. 552 (1831).
*Ægialites cantianus* (Lath.), Bp. Comp. List, p. 45 (1838).
*Hiaticula elegans*, Licht. Nomencl. Av. p. 94 (1854).
*Hiaticula cantiana* (Lath.), Licht. op. cit. p. 94 (1854).
*Ægialitis cantiana*, C. L. Brehm, Vogelfang, p. 283 (1855).
?*Ægialitis homeyeri*, C. L. Brehm, op. cit. p. 283 (1855).
*Ægialitis ruficeps*, C. L. Brehm, op. cit. p. 283 (1855).
*Ægialophilus* (*Ægialites cantianus*, Lath.), Gould, Handb. B. of Australia, ii. p. 234 (1865).
*Ægialites dealbatus*, Swinhoe, P. Z. S. 1870, p. 138.
*Charadrius trochilus*, Cuv., fide G. R. Gray, Hand-l. iii. p. 17 (1871).
*Ægialophilus cantianus* (Lath.), Hume, Stray Feathers, i. p. 230 (1873).

*Pluvier à collier interrompu*, French; *Lavadeira*, Portuguese; *Charran*, Spanish; *Fratino*, Italian; *Bou-hejaira*, Moorish; *See-Regenpfeifer*, German; *Strandplevier*, Dutch; *Hvidbrystet Strandpiber*, Danish; *Hvitbröstad Strandpipare*, Swedish.

*Figuræ notabiles.*

Werner, Atlas, *Coureurs*, pl. 15; Kjærb. Orn. Dan. taf. 30; Fritsch, Vög. Eur. taf. 33. fig. 2; Naumann, Vög. Deutschl. taf. 176; Sundevall, Svensk. Fogl. pl. 37. fig. 5; Gould, B. of Eur. pl. 298; id. B. of G. Brit. iv. pl. 40; Schlegel, Vog. Nederl. pl. 215; Wolf & Meyer, *l. c.*

♂ *ad. ptil. æst.* fronte, striâ magnâ superciliari, nuchâ, capitis et colli lateribus et corpore subtùs cum axillaribus et subtectricibus alarum albis: fasciâ frontali, loris, striâ per oculos et regione paroticâ, et maculâ magnâ, in utroque colli latere nigris, pileo rufescenti-brunneo: corpore suprà pallidè brunneo: remigibus primariis nigro-fuscis, scapis albis, secundariis pallidioribus et albo marginatis: rectricibus centralibus saturatè fuscis, reliquis albis: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* mari similis sed minus nigro notata et pileo fere dorso concolori sed vix pallidiore.

♂ *ptil. hiem.* corpore suprà saturatiore, pilei plumis sordidè brunneo marginatis, et plumis nigris in capite vix albido marginatis.

*Adult Male in summer* (Constantinople, 26th April). Forehead, a broad streak over and behind the eye, lower nape, sides of the head and neck, except as hereinafter stated, and entire underparts pure white; above the white on the forehead is a tolerably broad black patch; crown and occiput rich reddish brown; lores and a streak extending past the eye and including the ear-coverts, black, and on each side of the upper breast, in advance of the carpal joint, is a patch of black, which is not continued across the breast; upper parts generally light hair-brown; primaries blackish brown, the shafts white, except at the tip; secondaries lighter, and more or less edged with white; central rectrices blackish brown, the remaining tail-feathers white; axillaries and under wing-coverts white; bill and legs black; iris dark brown. Total length about 6·5 inches, culmen 0·8, wing 3·95, tail 1·7, tarsus 1·05.

*Adult Female* (S. Sweden, 14th June). Differs from the male in having the black markings narrower, and the crown and occiput coloured almost like the back, but rather paler.

*Adult Male in winter* (Rhodes, 5th December). Differs from the male in summer dress in having the upper parts darker, the reddish tinge on the crown and occiput obscured by brown edges to the feathers, and the black on the head blurred by white edges to the feathers.

*Young in first autumn* (Rye, Sussex, 18th September). No black on the head or sides of the breast; crown, nape, and sides of the head to below the eye light hair-brown with lighter edges; forehead dusky white; upper parts as in the adult, but the feathers have lighter margins; underparts white; the patches on the sides of the upper breast, which in the adult are black, are dull brown in the young; legs and bill black.

*Young in down* (Tangier). Forehead white with a tinge of yellowish buff at the base of the bill; a black streak through the eye to the nape, widening behind the eye; upper parts yellowish buff, variegated with black; underparts pure white.

*Obs.* As in most of the small Plovers, there is a considerable individual variation in size, not only in specimens from far distant countries, but amongst a series from the same locality. After measuring a large series, I find that the males vary in size about as follows—culmen 0·8–0·82, wing 4·0–4·45, tail 1·7–2·0, tarsus 1·05–1·12. The largest example is one from the south coast of England, and the smallest is one from near Constantinople; but I find the next largest is a bird from Darjeeling, and one, a mere trifle larger than the smallest bird, is from the Sussex coast. After a careful examination of Mr. Swinhoe's specimens of so-called *Æ. dealbata* from China, I cannot distinguish any difference, at least in the birds in a preserved state. Mr. Swinhoe informs me, however, that his *Æ. dealbata* has a spot at the base of the lower mandible light-coloured, and that the tarsi are of a lighter colour when fresh killed than in *Æ. cantiana*, both of which are, he says, found in China.

The present species does not range as far north as the common Ringed Plover, not being met with higher than Great Britain and Southern Scandinavia, but in Central and Southern Europe it is not uncommon in suitable localities, and has been met with as far south as the Cape colony in Africa. In Asia it occurs as far east as Japan; but in America it is replaced by *Ægialitis nivosa*.

In Great Britain it is met with but very rarely, except on the south coast of England, where perhaps a few pairs may yet breed, though it has been almost exterminated by thoughtless gunners and egg-collectors. It has been met with on the Norfolk coast, but is rare. Mr. Stevenson (B. of Norf. ii. p. 99) enters fully into the details of the various recorded occurrences, and enumerates from his own notes nine instances of its having been obtained in Norfolk

between 1850 and 1867. It only visits that county during the seasons of passage, and has not been known to breed there; and, according to Mr. Cordeaux (B. of the Humber Dist. p. 93), a pair were shot in May 1869, near Bridlington, on the Yorkshire coast, by T. Boynton, Esq., of Ulrome Grange. Further north than this I cannot find that it has occurred on the English coast; and it has not been recorded from Scotland. Kent and Sussex are the only counties in England where it is known to breed; and some years ago it used to be by no means very rare at Lydd and near Rye Harbour. Mr. Cecil Smith, who informs me that he has never known it to occur in Somersetshire, adds that in Guernsey it is tolerably common, and he killed a male and female in that island on the 2nd July, and saw several more in Alderney about the same time; so that it probably breeds in both islands. In Ireland, Thompson states, it is only known as an extremely rare visitant; and it appears that only one specimen obtained there has been preserved.

It has not been met with in Greenland, Iceland, or the Færoes; and though it is found in the southern districts of Sweden, it cannot, Mr. Collett informs me, be included in the avifauna of Norway. It was stated to have been obtained on Jæderen, near Stavanger, and at Christiania; but the specimens have turned out to be nothing but the young of the Ringed Plover. In Sweden it is restricted to the southern portion of the country, where it is a summer resident. Nilsson says that it breeds in tolerably large numbers in the southern part of Skåne, at Skanörsljung, and on the sandy island Kläppen. It has not been known to occur in Finland or in Northern Russia; but Borggreve says that it occurs on the coasts of North Germany, but is not common, and becomes less numerous towards the east, being scarcely ever met with in the interior.

It arrives at and leaves Denmark about the same time as the Ringed Plover. Kjærbölling says that it breeds on Sylt, Romö, Fanö, Saltholm, at Aarhuus, and Ulfshale-on-Möen; he also met with it commonly at Nymindegab, at the entrance of the Ringkjöbing fiord, at Blaavandshuk, Læsö, and Frederikshavn. On the Dutch coast it appears regularly during the seasons of passage; and Baron von Droste Hülshoff states that it breeds in tolerable numbers on the island of Borkum. Some few are stated to breed on the Belgian coast, where it is common during passage; and it is stated to be common and to breed numerously on the sandy portions of the French coast, and in the lower portions of the Camargue. Professor Barboza du Bocage speaks of it as occurring in Portugal, where, however, it is not common; and in Spain, Mr. Howard Saunders informs me, it is common, and breeds all round the coast. Colonel Irby writes also (Orn. Str. Gibr. p. 162) that it is by far the most plentiful of the sea-shore waders on the Spanish side of the Straits, where it is found throughout the year, but is most abundant during the seasons of migration. Mr. A. von Homeyer met with it on the Balearic Isles, where, he says, it is particularly common on the sandy coast of Majorca.

Passing eastward, again, I find it recorded as rare and of irregular occurrence in Savoy, where it generally appears in the autumn; but, according to Salvadori, it is rather abundant in many parts of Italy, especially along the Adriatic coast; but it appears to be local, and, whereas it is very common in Sardinia, it is somewhat rare in Sicily, except near Girgenti. Mr. C. A. Wright states (Ibis, 1864, p. 141) that in 1853 Mr. Medlycott and he shot several on Fort-Manoel Island, but that since then he has not observed it at Malta. Lord Lilford records it as being common in Corfu and all suitable localities in Epirus during the winter months, disap-

pearing about the middle of March; and Dr. Krüper states that it is a resident in Greece and Asia Minor, and numbers breed on the lagoons of Missolonghi and those near Smyrna. It has eggs late in April or early in May. Dr. Krüper is uncertain if it remains there over the entire winter. In Southern Germany it is of very rare, almost doubtful, occurrence; and Dr. A. Fritsch states that its occurrence in Bohemia rests solely on one specimen in the Museum at Prague, which is stated to have been obtained in Bohemia. Messrs. Danford and Harvie-Brown write (Ibis, 1875, p. 419) that it is rare in Transylvania. It is said to have been found breeding in the country. Herr Csáto says it rarely flies over from the plains of the Maros into the valley of the Strell. Messrs. Elwes and Buckley speak of it as being very common on the Bulgarian coast. I have examined specimens obtained near Constantinople by Mr. Robson; and Professor von Nordmann states that in Southern Russia it is the most abundant of the family from March to November. As above stated, Dr. Krüper says that it is common and resident on the coasts of Asia Minor; and Canon Tristram writes (Ibis, 1868, p. 323) that it breeds in several places in Palestine. In North Africa it is common; and Captain Shelley writes (B. of Egypt, p. 240) that it is "abundant both in Egypt and Nubia, frequenting the sandy flats near water, and is apparently a sociable bird, as it is always met with in flocks. Owing to the assimilation of their plumage to the ground they frequent, they are difficult to distinguish, and their presence is often first made known by the sudden rising of a flock from a spot in the immediate vicinity." Von Heuglin records it from the Nile, where, he says, it is found now and then in the winter; but he met with it more commonly in the summer on the Red Sea, and in September and October in the Gulf of Aden. All the authors on the ornithology of Algeria record it as common in that portion of Africa. Mr. O. Salvin says (Ibis, 1859, p. 355) that it occurs in abundanee along the shores of the large lagoon of El Baheira, between Tunis and La Goletta, and he found it breeding on the borders of most of the salt lakes in the interior. Mr. J. H. Gurney, jun., met with it at Laghouat; and Canon Tristram writes (Ibis, 1860, p. 78) as follows:—"One of the most universally distributed denizens of the Sahara, this species is to be found running rapidly along the sand by all the chotts and sebkhas in parties of from two to eight. It breeds everywhere, but, unlike our Ring-Plover, appears to lay only three eggs, which are placed on the level sand, without the precaution of even selecting the impress of a camel's foot." Favier speaks of it (*fide* Irby, *l. c.*) as being "very abundant near Tangier, and generally found at the mouths of rivers. Many are resident, those which are migratory arriving during September and October, leaving northwards in March and April." Southward it has been met with in Africa as far as the Cape colony. Mr. Andersson says (B. of Damara L. p. 272) that it is rare in Damara Land, where it occurs almost solely on the sea-coasts; and Mr. E. L. Layard writes (B. of S. Afr. p. 296) that there is a specimen in the South-African Museum, which came from a collection made by the late Mr. Villet at the Knysna. It likewise occurs in the Canaries, Madeira, and the Azores. According to Dr. C. Bolle, it is not only a winter visitant but a resident in Canaria in places where the coast is sandy, and certainly breeds there; and Mr. F. DuCane Godman (Nat. Hist. Azores, p. 32) writes as follows:—"I met with a few of these birds about the lakes in St. Michael's, but afterwards found them more plentiful about Capellas, in Fayal, and on the high ground between Angra and Praya, in Terceira. It breeds in Terceira, as I saw several young birds about, which were unable to fly."

To the eastward the present species is found as far as Japan. Mr. Blanford informs me that it does not appear to be common on the Persian plateau, but is more so on the sea-coast and near the Caspian. De Filippi obtained it at Sultániah, between Tabriz and Kazvin; and Major St. John adds that he once procured it near Yazdikhást in May. Mr. Hume says (*l. c.*) that he met with it all along the banks of the larger rivers, both in the Punjab and Sindh, occasionally in some of the inland waters of Sindh, and commonly in the Kurrachee harbour, and along the Mekran coast. Dr. Jerdon speaks of it as being generally diffused in India, but preferring the sea-coast to inland waters; and it is stated by Mr. Holdsworth and Lieut. W. V. Legge to occur in Ceylon, the latter gentleman giving an account of its breeding there. In China it appears to be to some extent resident, and otherwise migratory. Mr. Swinhoe describes a species (*l. c.*) under the name of *Ægialites dealbatus* from that country; but after a careful examination and comparison of that gentleman's specimens, I cannot detect any specific character whereby they can be distinguished from our European Kentish Plover, which is stated by him to be common on the coasts of South China and Formosa during winter, the majority migrating northwards in spring. Père David says that it is less common in North China than the Lesser Ringed Plover; and Captain Blakiston obtained it at Hakodadi, in Japan, in August. Neither Von Schrenck nor Middendorff records it from Siberia; but Dr. G. Radde met with it at Tareinor in April 1856, and obtained eight specimens; and Pallas states that it frequents the salt lakes of Dauria. According to Messrs. Finsch and Hartlaub, it occurs in the Pelew Islands. In America it is replaced by a closely allied species, *Ægialitis nivosa*, which differs in having the lores white, and not black as in the present species, in the summer dress; and even in the immature and winter plumage there is a trace of this dark mark on the lores in the present species and none in *Æ. nivosa*.

In habits the present species resembles the common Ringed Plover not a little; but it is much more of a coast-frequenting bird than that species. I used frequently to see small flocks of Kentish Plovers when collecting on the coasts of Kent and Sussex in the autumn some years ago. They were rather tame than wild, unless they had been molested, and ran about in a wavering manner along the shore like the Ringed Plovers, usually amongst the shingle, now and again uttering their call-note. I have never, however, seen or taken the nest of this species, not having had an opportunity of visiting its nesting-haunts during the breeding-season. The men who collect eggs on the shores told me that the nest is a mere depression in the sand or shingle, sometimes a little distance from the true shore, in sandy places, and then occasionally in a place where it is slightly concealed, but more frequently quite in an open situation, and the eggs, four in number, are placed with the pointed ends towards the centre. The best notes on the nidification of this bird that are known to me are those by Baron von Droste Hülshoff, who found it breeding numerously on the island of Borkum, and from whose work (Vogelw. Bork. pp. 154–157) I extract the following information. The Kentish Plover is very common on Borkum during the breeding-season, and is scattered throughout the dunes. The nest is placed both in the thickly overgrown dunes and in the large bare sandy tracts, as well as in the inner portions of the dunes, where rushes, grass, brambles, and *Ononis reptans* grow thickly; and he never met with it on the outer sands, as stated by Naumann, nor did he find the nest in an open situation, but often in the middle of a bunch of wild oats or amidst willow-shoots, though never so care-

fully hidden as that of the Redshank. The nest itself he describes as being a slight depression in the ground, lined with a few grass bents or fine rootlets. "Often," he writes, "several pairs breed within a very small area; I have found nests not ten paces distant from each other. The various pairs lived in amity together, and joined in uttering their cries when I approached. When any one approaches a nest, the male usually warns his mate by uttering a low flute-like note, *flüit*; and I sometimes caught sight of the female running, crouched down, from her nest; and only when she had traversed some distance, and got behind some cover, would she rise into the air and fly circling round, uttering a sharp but not loud *pit, pit*. Now and again the male would take his turn in circling round; and when either settled down it always alighted where some unevenness in the ground hid it from view, but would immediately run out to look at the intruder, uttering now and again its note, *flüit*. Should any one approach too close to the nest, the bird will crawl about at a few paces distance on the ground, uttering a mournful note, *trärr, trärr*, puffing out its feathers, turning its head and dragging one wing, and if pursued will run quickly away, but will recommence its former manœuvres should one again remain standing still. During the breeding-season the old birds seldom range far away from the nest, and one may observe the male performing curious aërial motions, which probably represent a sort of love-dance, like the drumming of the Snipe. It flies in a peculiar, Bat-like, wavering manner, the wings being very fully extended, the body thrown now on the one and now on the other side; and it almost describes a circle in its flight, uttering as it flies a peculiar note, which resembles the syllables *trit, tritritritrirrrr*. The young leave the nest during the first few days after they are hatched, but do not stray far until they are about half-grown, when they betake themselves to the shore—and when able to fly, collect in flocks and wander about."

Eggs of the present species in my collection, from Kent, Sussex, and the Holstein coast, have the ground-colour lighter or darker clay-ochreous, and are marked with greyish black underlying shell-markings and clearly defined black surface-spots and scratches. They differ from the eggs of *Æ. hiaticula* in having most of the markings irregular and scratchy, almost as if drawn with a pen, whereas in *Æ. hiaticula* they are generally clearly defined roundish spots and blotches. In size they vary from $1\frac{8}{40}$ by $\frac{33}{40}$ to $1\frac{13}{40}$ by $\frac{37}{40}$ inch.

So far as I can ascertain, the food of the present species is the same as that of the common Ringed Plover

The specimens figured are an adult male and a female in breeding-plumage, they being those above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Rye Harbour, Sussex, May 1860 (*E. Booth*). *b, c, juv.* Rye, September 13th and 18th, 1860 (*H. E. D.*). *d*, ♂ *ad.* Rye, May 1870. *e, pull.* Tangier, 1873 (*H. L. Irby*). *f, ad.* Sardinia, March 14th, 1869 (*G. E. Shelley*). *g*, ♂ *ad.* Near Constantinople, April 26th, 1863 (*Robson*). *h.* Djeddah, Red Sea (*S. S. Allen*).

*E Mus. H. B. Tristram.*

*a.* Alps, February 1856. *b*, ♀. Pulos, February 12th, 1858. *c*, ♀. Tuggurt, December 27th, 1856 (*H. B. T.*).

*d*, ♀, *e*, ♂. Riv. Kishon, March 19th, 1864 (*H. B. T.*). *f*, ♂, *g*, ♀. Tyre, December 1863 (*H. B. T.*). *h*. China (*Swinhoe*).

### *E Mus. J. E. Harting.*

*a*, ♀. Lydd Beach, Kent (*W. Kent*). *b*, ♂, *c*, ♂. Rye Harbour, Sussex, May 1866 (*W. Kent*). *d*, ♀. Pagham Harbour, August 1866. *e*. Sweden. *f*, ♂. Seine, France (*Fairmaire*). *g*, ♂. Gibraltar, April 24th, 1872 (*L. Irby*). *h*, ♂. Malaga, April 26th, 1869 (*H. Saunders*). *i*, ♂. Rhodes, December 5th, 1874 (*C. G. Danford*). *j*. Morocco (*Boucard*). *k*, *juv*. Morocco, autumn 1872 (*Boucard*). *l*, ♂, *m*, ♀. Nile, Egypt, winter (*H. Rogers*). *n*. Damara Land (*Andersson*). *o*, *p*. Darjeeling (*Colonel Sharpe*). *q*, ♀. Osenkeo, China, November 14th, 1857 (*R. Swinhoe*). *r*, *s*, ♀, *t*. Amoy, China, October 1866 (*R. Swinhoe*). *u*. Amoy, China, November 1866. *v*. Amoy, China, December 1867. *w*, ♀. Formosa, 1861 (*R. Swinhoe*). *x*. Bhawulpore (*Marshall*).

### *E Mus. R. Swinhoe.*

*a*. Hastings, Sussex, 1875. *b*, ♂. Safieh, January 28th, 1864 (*H. B. Tristram*). *c*, *d*, *e*. Amoy, China, January 1860 (*R. S.*). *f*. Amoy, February 1860 (*R. S.*). *g*. Amoy, March 1861 (*R. S.*). *h*, ♂, *i*, ♂. Amoy, April 1861 (*R. S.*). *j*, ♂, *k*, ♀. Amoy, May 1861 (*R. S.*). *l*, *m*. Amoy, June 1866 (*R. S.*). *n*, *o*, *p*, *q*, *r*. Amoy, July 1866 (*R. S.*). *s*, *t*. Amoy, October 1866 (*R. S.*). *u*, *v*, *w*, *x*, *y*. Amoy, November 1866 (*R. S.*). *z*. Shanghai (*A. Michie*). *aa*, ♀. Osenkeo, November 14th, 1857. *ab*. Talienwan, July 1860 (*R. S.*). *ac*, *ad*, *ae*, *af*, *ag*. Hainan, March 1868 (*R. S.*). *ah*, *ai*. Formosa, March 1862 (*R. S.*).



J.G.Keulemans lith.

M&N.Hanhart imp.

LITTLE RINGED PLOVER.

ÆGIALITIS CURONICA.

# ÆGIALITIS CURONICA.

(LESSER RINGED PLOVER.)

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? *Petit pluvier à collier de l'isle de Luçon*, Sonn. Voy. Nouv. Guin. p. 84, pl. 46 (1776).
*Le Petit Pluvier à collier*, Buff. Hist. Nat. Ois. viii. p. 90, footnote (1781).
? *Charadrius dubius*, Scop. Del. Flor. et Faun. Insubr. p. 93 (1786).
*Charadrius*, sp. nov., Beseke, Schr. Berl. naturf. Gesell. vii. p. 463 (1787).
*Charadrius alexandrinus*, var. δ, Gm. Syst. Nat. i. p. 684 (1788).
*Charadrius curonicus*, Gmel. Syst. Nat. i. p. 692 (1788, ex Beseke).
*Charadrius philippinus*, Lath. Ind. Orn. ii. p. 745 (1790).
*Charadrius minor*, Wolf & Meyer, Vögel Deutschl. Heft 15 (1805).
*Charadrius fluviatilis*, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 422 (1809).
? *Charadrius hiaticula*, Pall. Zoogr. Rosso-As. ii. p. 144 (1811).
*Charadrius minutus*, Pall. tom. cit. p. 145 (1811).
*Charadrius pusillus*, Horsf. Trans. Linn. Soc. xiii. p. 187 (1822).
*Ægialitis minor* (Meyer), Boie, Isis, 1822, p. 558.
*Ægialitis fluviatilis* (Bechst.), C. L. Brehm, Vög. Deutschl. p. 549 (1831).
*Ægialitis minor* (Meyer), C. L. Brehm, tom. cit. (1831).
*Charadrius hiaticuloides*, Frankl. P. Z. S. 1831, p. 125.
*Charadrius zonatus*, Swains. B. of W. Afr. ii. p. 235, pl. 25 (1837).
*Ægialites curonicus* (Gm.), Keys. & Blas. Wirbelth. Eur. p. 71 (1840).
*Hiaticula philippina* (Lath.), Blyth, Cat. B. Mus. As. Soc. p. 263 (1849).
*Hiaticula pusilla* (Horsf.), Blyth, op. cit. p. 264 (1849).
*Hiaticula curonica* (Beseke), Licht. Nomencl. Av. p. 94 (1854).
? *Hiaticula simplex*, Licht. op. cit. p. 94 (1854).
*Charadrius gracilis*, L. Brehm, Naumannia, 1855, p. 288.
*Charadrius pygmæus*, L. Brehm, Naumannia, 1855, p. 289.
*Ægialitis pygmæa*, C. L. Brehm, Vogelfang, p. 282 (1855).
*Ægialitis gracilis*, C. L. Brehm, op. cit. p. 282 (1855).
*Ægialites zonatus* (Swains.), Hartl. Orn. W.Afr. p. 216 (1857).
*Ægialites pusillus* (Horsf.), Swinh. Ibis, 1860, p. 63.
*Ægialites philippinus* (Lath.), Swinh. Ibis, 1861, p. 342.
*Ægialitis minutus* (Pall.), Jerdon, B. of India, ii. p. 641 (1863).
*Pluvialis fluviatilis* (Bechst.), Droste, Vogelw. Borkums, p. 153 (1869).

*Petit Pluvier à collier*, French; *Lavadeira*, Portuguese; *Frailecillo*, Spanish; *Monakella sekonda*, Maltese; *Fluss-Regenpfeifer*, *kleiner Regenpfeifer*, German; *kleine Plevier*, Dutch; *Prostekrave*, *Sandevit*, *Tudse*, *Tijhit*, Danish; *Liden Strandryle*, Norwegian; *Mindre strandpipare*, Swedish; *Pieni ranta raukuja*, Finnish.

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*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 921; Werner, Atlas, *Coureurs*, pl. 14; Kjærb. Orn. Dan. taf. 30; Fritsch, Vög. Eur. taf. 33. figs. 3, 4; Naumann, Vög. Deutschl. taf. 177; Sundevall, Svensk. Fogl. pl. 37. fig. 4; Gould, B. of Eur. pl. 297; id. B. of G. Brit. iv. pl. 42; Schlegel, Vog. Nederl. pl. 214.

♂ *ad. Æ. hiaticulæ* coloribus similis sed conspicuè minor, rectrice extimâ rhachi albâ, reliquis rhachibus fuscis: rostro nigro maculâ ad basin mandibulæ flavâ: pedibus pallidè et sordidè ochraceis: iride fuscâ, marginibus palpebrarum flavis.

*Juv. Æg. hiaticulæ* similis sed minor.

*Adult Male* (near Constantinople, 3rd June). In coloration and general distribution of colour closely resembling *Ægialitis hiaticula*, but smaller in size; the shaft of the first primary alone white, those of the rest of the quills brown; bill black, with a small yellow patch at the base of the lower mandible; legs dull fleshy yellow; iris deep brown, edge of the eyelid yellow. Total length about 6 inches, culmen 0·62, wing 4·33, tail 2·3, tarsus 0·95.

*Young* (Secunderabad). Resembles the young of *Ægialitis hiaticula*, but may be distinguished by its smaller size, and by the first primary alone having a white shaft.

The present species has a very extensive range—being found throughout Europe (except in the high north), in Africa down as far south as the Gaboon and Mozambique, and in Asia as far south as the Philippines and as far east as China.

With us in England it is but a rare straggler; and it is by no means easy to determine which of the recorded occurrences really refer to the present species, and which to the small form of *Ægialitis hiaticula*, which has so often done duty for the Lesser Ringed Plover. Mr. J. E. Harting enumerates eleven instances of its occurrence in England, and adds that one of the specimens there recorded is in his own collection; but it does not appear to have been met with either in Scotland or Ireland. It does not occur in Greenland or Iceland; and though Mr. H. C. Müller records its occurrence on the Færoes, he may have mistaken a small specimen of *Æg. hiaticula* for this species. It is, however, found in Norway, and breeds, Mr. Collett says, in sandy places on the shores of the fiords in Christiania and Christiansand stifts, more sparingly along the west coast up to the Trondhjemsfiord, where it breeds in the Surendale. In the interior it is not uncommon on inland waters, as at Öieren, Fiskumvand, Valders, Ransfiord, and Glommen. In Sweden, Professor Sundevall says, it does not range much above 60° N. lat. It is found in Upland, at Gefle, in Nerike, and Southern Wermland, and south of those districts in suitable localities. According to Dr. Palmén (Finl. Fogl. ii. p. 90) it "is only found in Southern and Central Finland. It is common on the southern coast near Wyburg and Borgå, where it breeds; several nests were found on Nordsjöskatan, east of Helsingfors, in 1861, early in June. It has also been found in the parish of Helsinge, and remains on the coasts as late as the end of September. Mr. Sahlberg saw it on the Pyhäjärvi Lake, and it occurs on Åland. It ranges up into Southern Österbotten; and Mr. Alcenius obtained the bird and eggs in Larsmo kapell. It is found on the Ladoga, and breeds at Kexholm. J. von Wright observed it at Kuopio on the

spring passage, and its nest was found there early in June 1869; and in 1870 Mr. Aschan shot one of a pair on the 14th June at Ahkionlaks canal, in Maaninka kapell." Mr. Meves met with it in Northern Russia; and Mr. Sabanäeff says that it is generally distributed throughout Central Russia, and is especially numerous on the Kama. It is common on the Volga, and on the larger rivers in the Governments of Tver, Jaroslaf, and Kostroma, but is rarer in that of Moscow and in the Ural. Throughout the countries bordering the Baltic it appears to be common, frequenting inland waters; and Naumann speaks of it as being very generally distributed in Germany on the inland waters where the soil is suitable, and numerous on the Elbe. It arrives early in April, sometimes late in March, and leaves late in August or September, a few stragglers occasionally remaining as late as October. Mr. Benzon informs me that it has certainly been known to breed in Denmark; and Kjærbölling states that it is by no means very uncommon in that country. Mr. Sachse informs me that it breeds on the Rhine, but is rarely seen near Altenkirchen. Professor Schlegel includes it in his work on the birds of Holland, though he gives no particulars as to its occurrences in that country; but Mr. Labouchere informs me that it occurs in small numbers on passage. In Belgium it is a tolerably regular migrant along the Meuse, and is abundant in the marshy plains of the neighbourhood of Maestricht, and along the river-banks. In Luxembourg it is common along the Moselle and the Sûre, where it breeds; and De la Fontaine proves that it does not sit on its eggs throughout a great part of the day. In the northern and central departments of France it is somewhat rare, and only a limited number breed there; but in the south it becomes more abundant, nesting regularly along the Durance and the Verdora, although not observed in the Camargue. Professor Barboza du Bocage speaks of it as being common in Portugal; and Colonel Irby says (Orn. Str. Gibr. p. 161) it is abundant in Spain, but not so numerous in winter as during the breeding-season. In the Balearic Isles it is, Von Homeyer says, the rarest of the Plovers, but is more numerous in the interior than on the coast. In Savoy it arrives in the spring in small flocks; and they then separate into pairs, and many breed along the Rhône, the Isère, and in other suitable localities. They leave in August; but some remain as late as October, at which time a second detachment passes through from other countries.

In Italy it is resident, its numbers being augmented at times of migration; and in Sicily it is principally a visitant, although some breed in the Madorina, and probably in other districts. Mr. C. A. Wright says (Ibis, 1864, p. 141) that it is common in Malta, arriving and departing together with the common Ringed Plover. In southern Germany it is tolerably common, and generally distributed; and Dr. Anton Fritsch says (J. f. O. 1871, p. 384) that it frequently breeds on the sandy and pebbly shores of large and small rivers in Bohemia. It is common in the vicinity of Prague, even on the Hetzinsel, and near Lieben. He also found it near Laun, Horazdovic, Frauenburg, &c. &c. Kablik mentions this bird as breeding near Hohenelbe. The late Mr. Seidensacher says that it breeds on the Sann, in Styria. It arrives early in April, and leaves about the end of August. Messrs. Danford and Harvie-Brown say (Ibis, 1875, p. 419), it is "common along the stony parts of rivers. We observed it at Bogát, on the Maros, and at Hátzeg." In Greece, Dr. Krüper states, it inhabits the sandy banks of the rivers and the sea-shore, and breeds in the country. He thinks it not improbable that it winters in the Cyclades. Lord Lilford says it is tolerably common in Corfu in April and May, particularly in the Val di Corissia and at Potamo, only remaining a few days in the island. Colonel Drummond-Hay

writes that in April he found it common in Crete, but all had left by the 15th May. Mr. Robson says that it is pretty numerous in European and Asiatic Turkey, and a constant resident in the country; and Dr. Finsch states that it breeds on the streams of Bulgaria quite high up the Balkan. Professor von Nordmann speaks of it as being very common in Southern Russia, arriving near Odessa early in March; and it appears to be tolerably common in Asia Minor. Canon Tristram obtained it on several occasions on the Kishon, in Palestine, and he believes that he saw it more than once on the shores of Galilee; but it is, he adds, much less numerous than *Ægialitis hiaticula*. It is recorded from North-east Africa by all the travellers who have written on the ornithology of that country. Captain Shelley says that it is resident and very abundant throughout Egypt and Nubia. Mr. J. H. Gurney, jun., writes to me, "it is a resident, universally distributed, and very common. I imagine they generally breed by the river; but at Gebel Silsilis a small flock had located themselves at the brink of the desert, a mile inland, at a place resembling Thetford warren, in Norfolk, where *Æ. hiaticula* breeds inland;" but Von Heuglin says that he only observed it in Egypt in the winter season, and that it is nowhere common in that country. He met with it sparingly on the shores of the Red Sea, on the Nile and its branches to the vicinity of the equator, westwards in the Req swamp. According to Loche it is tolerably numerous in Algeria, where some few remain to breed; and Mr. O. Salvin met with it in the neighbourhood of the marsh of Zana during the breeding-season. Mr. Drake does not record it from Tangier; but Colonel Irby found it very common there in April on river-banks. It occurs on the west side of Africa as far south as the Gaboon. It has been obtained at Senegal and on the Gambia. Verreaux records it from Casamanse, Pel from the Gold Coast; Governor Ussher shot one at Accra; and DuChaillu obtained it on the Gaboon. On the east side of the continent it has been recorded from South Mozambique by Dr. Peters; and there is a specimen in the Berlin Museum from Mauritius.

To the eastward it is met with as far as China. De Filippi found it common in summer on the sandy beds of streams in Northern Persia; and Mr. Blanford believes that he saw it on the borders of the lake at Shiraz in June. It is generally distributed in India, being found, Dr. Jerdon writes (B. of India, ii. p. 641), throughout that country "in open plains, ploughed land, dried-up paddy-fields, and the edges of tanks and rivers, as well as on sandbanks and churrs. It is generally in small flocks, from half a dozen to twenty or more, feeding not very close to each other, and running about in a lively manner, frequently taking flight, circling round with a cheerful whistling note, and alighting again near the same spot." Dr. Jerdon includes two species of Little Ringed Plovers, one under the name of *Ægialitis philippensis* (Scop.) and the other under that of *Ægialitis minutus* (Pall.), both of which appear to me to be referable to the present species; and I may add that though I find, as in the series I examined of *Æg. hiaticula*, that there is also in the series of examples of the present species a considerable variation in size, I cannot discover any characteristics whereby two species can be discriminated. Under the name of *Ægialitis minutus* Dr. Jerdon further records the present species as found in the Deccan, generally among hills, and also from the top of the eastern Ghâts inland from Mellore. It occurs in Burmah, and was obtained at Tonghoo by Mr. Wardlaw Ramsay. Throughout South Siberia it appears to be very generally distributed. Dr. L. von Schrenck says that it inhabits the entire Amoor country, and is very numerous on the Amoor river, especially when it is low and

long patches of sandy and stony ground are left bare. On the Lower Amoor he met with it at Pessuï, Kulgu, Dsifu, and Dshare. Dr. Radde first met with it at the Tarei-nor on the 23rd April (O. S.), and found it numerous at Lake Baikal in the summer season. Mr. E. von Homeyer speaks of a difference in the markings of the tail in eastern specimens; but I cannot, judging from those I have examined, detect any constant difference between Asiatic and European birds. Mr. Swinhoe says that it is found throughout South China, Formosa, and Hainan in winter, and breeds at Talien Bay, North China. Southward the present species appears to range as far as the Philippines, Celebes; and it is stated also to be found in Java.

So far as I can ascertain from the examination of a considerable series of specimens, I do not think that there are two distinct forms of the present species; but Lord Walden writes (Trans. Zool. Soc. viii. p. 89):—"*Æg. minutus* (Pall.) apud Jerdon is a smaller and more delicately formed species. In plumage it closely resembles *Æg. curonicus*, but has the head-markings better defined than those of any example of that species I have as yet seen. Its chief distinction is to be found in the smallness of the feet and shortness of the legs. A Katmandoo specimen has the legs dark reddish brown instead of yellow. It behoves naturalists in India to investigate these differences. I am inclined to believe in there being two species, but have not been able to examine a sufficiency of individuals to form a decided opinion."

In general habits the present species differs but little from the common Ringed Plover, except that, instead of frequenting the sea-coast, it affects the vicinity of fresh water; and it is usually met with on the banks of rivers and shores of freshwater lakes and ponds, where the soil is sandy and where there are plenty of pebbles and small stones strewn about. Occasionally, when such places are rare in the vicinity of water, it will frequent sandy patches at some distance from water; but it then visits this latter very regularly and frequently. In mode of flight, general appearance, and mode of progression when on the ground, it closely resembles its larger ally; but its note is different, and much more shrill in tone. Naumann, whose description of the notes of birds is generally so accurate, says that its call-note resembles the syllables *diä* or *deä*, uttered very short, so that the two vowels are almost united. This note is frequently modulated in various ways, sometimes uttered singly; and when repeated, it is with considerable intervals. The pairing-note or song begins slowly and is closed with a peculiar trill like the syllables *düh*, *dü*, *düll*, *lüll*, *lüllüllüll*. This note is only heard at the breeding-place, and is more frequently uttered by the male, more seldom by the female, when seated as well as when on the wing, but most frequently when performing the aerial evolutions in which the bird so frequently indulges during the pairing-season.

It nests in places where there is pebbly ground, like those selected by *Ægialitis hiaticula*, and not in localities where there is sand without a strong admixture of small stones. The nest is a mere depression in the ground amongst the stones; and the eggs, which are deposited about the middle of May, are four in number, and are, like those of other Waders, placed with the points inwards. In general character the eggs of this bird resemble those of *Ægialitis hiaticula*, being stone-buff or stone-ochreous spotted with blackish brown; but the spotting is much finer, and there are but seldom any large blotches. As a rule also I find in the eggs of the present species more purplish grey shell-markings. In size those in my collection vary from $1\frac{6}{40}$ by $\frac{34}{40}$ to $1\frac{9}{40}$ by $\frac{34}{40}$ inch.

Mr. Robson, who sent the present species to me under the name of *Ægialitis hiaticula*, informs me that "it is a constant resident in European Turkey. They have many breeding-stations on the coast of the Black Sea, both on the European and Asiatic seaboard, in situations where valleys debouch towards the ocean, their wide fronts covered with sand and pebbles, with shallow streams of fresh water trickling over a narrow surface towards the beach. In natural cavities in the shingle these birds lay their eggs; and in the shallow streams near the sea they find their food, water-beetles and the larvæ of insects that come down from the mountains in numerous small streams that unite as they near the coast. The colour of this species resembles so nearly the appearance of the locality it inhabits that it is difficult for the untutored eye to detect it sitting. On its eggs being approached by man it steals off a short distance, curves its head and tail downwards, and runs in irregular lines, much like a small animal, to decoy the intruder away from its eggs, which result being accomplished it rises into the air, making a distant whirl, uttering its piping cry, and, gradually lessening the circuit of its flight, alights on the sands and waits a favourable opportunity for returning to its eggs. It is lively and active, and runs with much speed on the sands."

Its food consists, like that of *Ægialitis hiaticula*, of small water-insects and worms, and never of vegetable substances. It frequently turns over the stones in search of the small insects which are found underneath.

The specimens figured are the adult and young birds above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*. Hvalö, Norway (*Collett*). *b*, ♀. Ekaterinburg, Russia, June 16th, 1868 (*L. Sabanäeff*). *c*, ♂. Casa Vieja, Spain, May 14th, 1874 (*Col. Irby*). *d*. Malta, April 4th, 1868 (*C. A. Wright*). *e*. Switzerland (*Möschler*). *f*. Khathane, Turkey, April 6th, 1870 (*Robson*). *g*, ♂, *h*, ♀. White's spring, near Constantinople, June 3rd, 1871. *i*, ♂. Kalagan, Baluchistan, March 19th, 1872 (*W. T. Blanford*). *k*, ♂. Secunderabad, November 1st, 1869 (*G. M. Slaughter*).

*E Mus. R. Swinhoe.*

*a*, ♂. Sartchy, Mongolia, May 9th, 1866. *b*. India. *c*, *d*. Amoy, 1861. *e*, ♂, *f*, ♀. Shanghai, May 1873 (*R. S.*). *g*. Hongkong, April 1860 (*R. S.*). *h*. Hongkong, autumn (*R. S.*). *i*. Hainan, February 1868 (*R. S.*). *k*. S.W. Formosa, 1861 (*R. S.*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. River Genil, Granada, October. *c*, ♂. Seville, August. *d*, ♂ *juv*. Seville July 25th. *e*, *f*, ♀ *juv*. Malaga, July 30th and October 8th.

*E Mus. C. A. Wright.*

*a*. Malta (*C. A. W.*). *b*. Malta, March 1869 (*C. A. W.*). *c*. Malta, April 20th, 1869 (*C. A. W.*). *d*, ♂. Mal a, May 6th, 1869 (*C. A. W.*). *e*, ♀. Malta, May 4th, 1871 (*C. A. W.*). *f*, ♀. Malta, May 1871 (*C. A. W.*). *g*, ♂. Malta, May 13th, 1874 (*C. A. W.*).



RING-PLOVER.
ÆGIALITIS HIATICULA.

# ÆGIALITIS HIATICULA.

(RINGED PLOVER.)

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*Pluvialis torquata*, Briss. Orn. v. p. 60, pl. v. fig. 1 (1760).
*Pluvialis torquata minor*, Briss. tom. cit. p. 63, pl. v. fig. 2 (1760).
*Charadrius hiaticula*, Linn. Syst. Nat. i. p. 253 (1766).
*Le Pluvier à collier*, Buff. Hist. Nat. Ois. viii. p. 90 (1781).
*Charadrius torquatus*, Leach, Syst. Cat. Mamm. & B. Brit. Mus. p. 28 (1816).
*Ægialitis hiaticula*, Boie, Isis, 1822, p. 558.
*Ægialitis septentrionalis*, C. L. Brehm, Vög. Deutschl. p. 548 (1831).
*Charadrius intermedius*, Ménétr. Cat. rais. p. 53 (1832).
*Hiaticula annulata*, G. R. Gray, List of Gen. of B. p. 65 (1840).
*Hiaticula torquata*, G. R. Gray, List of Spec. of B. in B. Mus. iii. p. 68 (1844).
*Hiaticula hiaticula* (Linn.), Licht. Nomencl. Av. p. 94 (1854).
*Hiaticula arabs*, Licht. op. cit. p. 94 (1854).
*Aegialites hiaticuloides*, Heugl. Syst. Uebers. p. 56 (1856).
*Aegialites auritus*, Heugl. op. cit. p. 56 (1856).
*Ægialites intermedius* (Ménétr.), Gurney, Ibis, 1868, p. 255.

*Ringed Plover*, *Ringed Dotterel*, English; *Bodhag*, *Trileachan traighe*, Gaelic; *Pluvier à collier*, French; *Lavadeira*, Portuguese; *Frailecillo*, Spanish; *Corriere grosso*, Italian; *Monachella prima*, Maltese; *Sand-Regenpfeifer*, *Halsband-Regenpfeifer*, German; *de bontbekkige Plevier*, Dutch; *Stor Strandpiber*, Danish; *Tukagvajok*, Greenlandic; *Sandtoa*, Icelandic; *Strandryle Strandvibe*, Norwegian; *Större Strandpipare*, *Sandrulling*, Swedish; *Tyllikurmitsa*, Finnish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 920; Werner, Atlas, *Coureurs*, pl. 13; Kjærb. Orn. Dan. taf. 30; Frisch, Vög. Deutschl. taf. 214; Fritsch, Vög. Eur. taf. 38. figs. 1, 5; Naumann, Vög. Deutschl. taf. 175; Sundevall, Svensk. Fogl. pl. 37. figs. 2, 3; Gould, B. of Eur. pl. 296; id. B. of G. Brit. iv. pl. 41; Schlegel, Vog. Nederl. pl. 213; Wolf & Meyer, Naturg. Deutschl. Heft 15.

*Ad. ptil. æst.* supra basin rostri fasciâ inter oculos niveâ, supra hanc fasciâ nigrâ: fasciâ a basi rostri infra oculos ad tempora et fasciâ in gutture imo circum collum, sed posticè multo angustiore, nigris: vertice, occipite et corpore suprà fusco-griseis: remigibus nigricantibus, rhachibus versus apicem albis: tectricibus alarum majoribus albo apicatis: rectricibus centralibus fusco-griseis, versus apicem nigris, duabus extimis fere omnino albis, reliquis fusco-griseis albo terminatis: gulâ, fasciâ collari et corpore subtùs albis: rostro aurantiaco, versus apicem nigro: iride fuscâ: pedibus aurantiacis.

*Juv.* fasciâ frontali albâ angustiore, fasciâ nigrâ frontali et fasciâ in gutture imo nullis: fasciâ per oculos nigro-

fuscâ: corpore suprà ut in adulto sed plumis in dorso vix pallidiore apicatis: corpore subtùs albo, gutturis lateribus fuscis et fasciâ indistinctâ in gutture imo pallidè fuscâ.

*Adult Male* (Pagham, Sussex, 4th May). Fore part of the crown, a narrow line at the base of the upper mandible, lores, and a patch through the eye and covering the auriculars, and a broad band crossing the lower part of the throat, narrowing and meeting behind the neck, deep black; forehead and a broad band passing above and behind the eye, throat, a collar passing round the neck above the black one, and underparts of the body pure white; hind crown, nape, and upper parts generally dull hair-brown; quills blackish brown, the shafts of almost all dark at the base and white towards the tip, some of the inner primaries with a white mark on the centre of the outer web, secondaries white at the base, one or two of the inner short ones almost pure white; larger wing-coverts tipped with white; central tail-feathers hair-brown, becoming black towards the tip, remaining ones broadly tipped with white, the outer ones almost pure white; under wing-coverts and axillaries white; beak orange-yellow at the base, black at the point; iris brown; legs orange; claws black. Total length about 7·5 inches, culmen 0·65, wing 5·0, tail 2·45, tarsus 0·92.

*Adult Female.* Differs from the male in being rather duller in colour, and in having the black bands and collar narrower, and less pure in colour.

*Young of the year* (Rye, Sussex, 8th September). Upper parts as in the adult, but some of the dorsal feathers with light edges; the white on the forehead narrow, and the black frontal band on the head, as well as that on the lower throat, wanting; patch through the eye and auriculars dull dark brown; underparts white, the sides of the upper breast and a narrow band across the lower throat dull brown, the latter indistinct in the centre.

*Nestling in down* (German coast). Forehead white; crown greyish brown, mottled with light stone-grey; from the base of the bill round the nape a black band passes, and is broadest on the nape; a broad collar round the neck and the entire underparts pure white; back and upper parts generally greyish stone-brown, finely mottled with dirty white and blackish brown.

*Adult in winter* (Pagham, Sussex, 3rd December). Differs from the adult in summer dress merely in having the black portions of the plumage sullied with dull greyish.

*Obs.* Specimens of the Ringed Plover vary greatly in size; and, so far as I can judge from many specimens examined, there appear to be two races found on our coasts, differing only in size—one larger, and the other smaller; but specimens vary so much, *inter se*, that it is impossible to draw the line between them. The largest and smallest males in the series are both from Pagham, in Sussex: the former measures—culmen 0·72, wing 5·55, tail 2·75, tarsus 1·1; and the latter—culmen 0·65, wing 4·97, tail 2·42, tarsus 0·98. And a specimen from Djeddah, on the Red Sea, agrees precisely both in plumage and measurements with the latter specimen.

The common Ringed Plover is found throughout the whole of Europe, in Africa as far south as the Cape colony, eastward into Western Asia; and it has also been recorded by Mr. Gould from Australia.

In Great Britain it is very generally distributed, and is found at all seasons of the year, frequenting the coasts, chiefly in bays and inlets. Mr. Robert Gray speaks of it as being common on the coasts of Scotland and the islands off the same; and Dr. Saxby says that in no part of the

British islands does it breed more plentifully than in Shetland. In Ireland, Thompson writes (B. of Ireland, ii. p. 96), "it is common at all seasons, except summer, in small flocks around the sandy and gravelly shores, where also a limited number annually breed."

Professor Newton says that it breeds generally in Greenland, and is found on Sabine and Clavering Islands. It is said to be abundant on the shores of Possession Bay and Regent's Inlet; but a nearly allied species was perhaps mistaken for it. Dr. Finsch states that the German Arctic Expedition brought back five specimens from East Greenland, most of which were obtained on Sabine Island. One was found frozen in the end of September 1869, and a female was shot from her nest, which contained four eggs, on the 16th July, 1870, on Clavering Island. In Iceland it is said to be not rare on the sea-coast and on some of the moors in the interior; and Captain Feilden says that it is not so numerous in Færoe as in some parts of Britain during the breeding-season, more especially the Outer Hebrides. He often remarked it flying with Dunlins; and Müller notices that it flocks in winter with the Purple Sandpiper. Throughout Scandinavia it is common. Mr. Collett says that it breeds along the whole coast of Norway, from the Hvalöer to the Russian frontier, as also here and there in the interior in sandy and pebbly places, and in the fells above the birch-region. It arrives, he tells me, in April, and leaves again for the south in September. It has been met with in Spitzbergen, where, however, it must be of but very rare occurrence. Professor Newton, writing respecting its occurrence there, says (Ibis, 1865, p. 504), "Sir James Ross states that a bird of this species was killed by Mr. M'Cormack in Hecla Cove; and it may be inferred from what he says that General Sabine also obtained a specimen in Spitzbergen. Dr. Malmgren mentions that Professors Torell and Nordenskjöld found on one of the Seven Islands, in lat. 80° 45′ N., a brood of Ringed Plovers, which had probably been bred on one of these, the most northern islets of the known world."

In Sweden it is generally distributed on the sea-coast and the shores of the lakes, from the southernmost portion of the country up into Lapland. Nilsson says that it arrives late in March, and migrates southward again in September. In Finland I found it common and very generally distributed all along the coast and on the islands; but Dr. Palmén says that it only breeds in the interior in the northern portions of the country. It arrives and leaves about the same time as in Sweden. Throughout the whole of Northern Russia it appears to be common in summer, and is met with on Novaya Zemlya, where it breeds. Mr. Gillett mentions (Ibis, 1870, p. 306) that he saw several families in Matthew's Straits, and also on the eastern side; and Dr. Th. von Heuglin writes (J. f. O. 1872, p. 11) as follows:—"Is very common on Novaja Semlia and Waigatch. In the beginning of August we found young in down at the Malotchkin Sharr, which could only be a few days old. Lives in pairs and families at the sea-shore, as well as at the edges of brooks and dry meadows. In the beginning of September the young were fully fledged."

Mr. Sabanäeff says that in Central Russia and in the Ural country it is rarer than *Ægialitis curonica*, and is chiefly met with on the banks of the Volga. Throughout the Baltic provinces and in North Germany it is common on the coasts during the summer months, especially in sandy localities, and is also met with on some of the inland lakes. Mr. E. H. von Homeyer informs me that it is not uncommon on the inner bays of Rügen and the neighbouring islands, as well as on some portions of the coasts of the mainland. It visits Denmark during the summer,

arriving in March and leaving again in September; Kjærbölling says that it breeds on the large uncultivated open patches of country and on the islands. Baron von Droste Hülshoff says that it breeds on the island of Borkum, off the coast of Holland, but not commonly, though during passage it is numerous; and Mr. H. M. Labouchere informs me that it is also very common on the Dutch coast, where it is seen as early as the end of August, and often remains till quite late in the spring, but does not breed there. In Flanders it is common during the two seasons of passage, when it is also found along the rivers in the interior of Belgium and Luxemburg; and in France it frequents the sandy shores of the north and west, as well as those of the Mediterranean, some being resident; but their numbers are largely augmented during the seasons of passage. Professor Barboza du Bocage states that it is common in Portugal; and Mr. Howard Saunders speaks of it (Ibis, 1871, p. 386) as being common in winter; but he does not believe that it remains to breed. Colonel Irby, however, writes (Orn. Str. Gibr. p. 161) as follows:—"Though I have no absolute proof, I am nearly sure that this species occasionally remains to breed near Gibraltar, as I have shot them as late as the 28th May, and have seen eggs obtained near Seville as early as the 23rd of March; but this is the only instance I know of their nesting so far south. During autumn, and until April, the Ring-Plover is extremely plentiful along the coast, and most so in the month of March." In the Balearic Islands it is not so common as on the mainland of Spain; and, passing eastward, I find it recorded as visiting Savoy in March and again in August; and a few remain, Bailly says, to breed on the banks of the Rhone and the Isère. In Italy it is principally a visitor during passage, and Salvadori does not think that it breeds anywhere, Durazzo's statement that it nests in Liguria being, he thinks, owing to confusion with *Æ. curonica*. In Sicily, Doderlein says, it is the commonest of the shore-birds; and he asserts that some remain to breed. It is also abundant in Sardinia; and Mr. C. A. Wright speaks of it (Ibis, 1864, p. 141) as being "common at the heads of creeks and harbours in Malta in spring and autumn. It commences to appear in March, and is occasionally seen in summer." Lord Lilford says that he observed it occasionally at Butrinto in February and March; and Dr. Krüper states that it arrives in Greece in the autumn and remains there over the winter. It is found also on the Cyclades in winter. In Southern Germany it appears to occur only on passage, and is somewhat rare. Referring to its occurrence in Bohemia, Dr. Fritsch says (J. f. O. 1871, p. 384) that he killed a specimen on a small pond near Brezan. Mr. Lokaj obtained it on several occasions in the spring; and Palliardi states that though it visits the vicinity of Franzensbad but rarely in the spring, it is common in the autumn. Messrs. Danford and Harvie-Brown speak of it as being rare in Transylvania, where it is occasionally seen on passage; and Mr. Robson informs me that it is tolerably common in Asiatic and European Turkey; but as he adds that there are many places where it breeds, I cannot but surmise that he has confused the Lesser Ringed Plover with the present species, especially as all the specimens he has sent me from there are referable to *Æ. curonica*. Professor Von Nordmann says that though it is not rare at the two seasons of passage on the shores of the Black Sea, it is far less numerous than its two congeners. I cannot but include the bird described from the Caucasus by Ménétriés (*l. c.*) under the name of *Charadrius intermedius* as belonging to the present species; for the description given by him tallies tolerably well with the small form of the common Ringed Plover, but does not agree with the Lesser Ringed Plover. Ménétriés states that it is not rare on the banks of the Lenkoranka

river, not far from the Caspian. Canon Tristram met with the present species during winter on the coast of Palestine; and it appears to be a winter visitant to North-east Africa. Captain Shelley states (B. of Egypt, p. 241) that he only met with the small race or form of the present species, which he refers to under the name of *Æ. intermedius*; but, as above stated, I cannot recognize any specific distinction between the smaller and larger birds; and I may add that I possess examples, not differing from our British species, from Egypt and Djeddah on the Red Sea. Von Heuglin says (Orn. N.O.-Afr. p. 1027) that it is found on the Nile during the winter, southwards to the Upper Kir. He also observed it in Abyssinia, on the Tana lake and near Qualabat and Sarago, in full breeding-dress, in April, and in May and June in the Gulf of Suez. On the west side of the continent it also occurs; and, according to Loche, it is common in Algeria on passage; and Favier states (*fide* Irby, *l. c.*) that "near Tangier it is found in small numbers in pairs and companies on the sea-shore. They arrive during the months of September, October, and November, returning north again in April and May." Captain Shelley says (Ibis, 1875, p. 85) that he found it not uncommon at Durban, in South Africa. Mr. Andersson speaks of it as occurring at certain seasons at Walvisch Bay, but only very sparingly elsewhere; and Mr. E. L. Layard writes (B. of S. Afr. p. 298) as follows:—"M. Victorin procured it at the Knysna, and Mr. Ayres at Natal. My son shot a fine specimen, in full plumage, at Salt-river mouth, near Cape-town, in April 1865." Vernon Harcourt states that it is found at Madeira; but I find no positive record of its occurrence on the Canaries—though Dr. Carl Bolle states (J. f. O. 1857, p. 337) that he was told that on the Isleta of Canaria a Plover occurs which, from the short description he gives, appears to be referable to the present species.

It is somewhat difficult to define the precise eastern limits of the range of the present species; for in some instances I cannot but surmise that it has been confused with allied species. Mr. G. R. Gray states that it occurs in Persia; but Mr. Blanford did not observe it there. Nor does it appear to have occurred in India; for, according to Mr. Hume (Stray Feathers, i. p. 495), the record by Mr. Blyth of its occurrence there was founded on error. Dr. Severtzoff, however, states (Turk. Jevotnie, p. 69) that it breeds rarely in Turkestan; and Von Middendorff says that he found it breeding on the Taimyr, nearly in 74° N. lat., and that he observed the first on the Boganida on the 25th May (O. S.). Curiously enough Mr. Gould states (Handb. B. of Australia, ii. p. 231) that he possesses an undoubted Australian specimen, which was killed at Port Stevens.

Although during the nesting-season the Ringed Plovers are scattered about, some breeding on the coast and some near inland pieces of water, yet when the young are hatched and able to shift for themselves, they all resort to the sea-shore, and are then seen in large or small flocks on the shingly beaches, sandy shores, or on the mud-banks which are left bare by the receding tide. They are especially to be met with where rivers or larger streams fall into the sea, and where large banks of sand or mud are left bare at low water. Here they search after their food, which consists of aquatic insects, small shell-fish, marine worms, &c. &c. They run with great swiftness, every now and then uttering a clear, somewhat plaintive cry, stopping now and again for a second suddenly and then running swiftly onwards, the body being kept almost motionless, the head drawn in, and the feet pattering along with incredibly quick steps, making the bird appear almost as if it were gliding along. When approached too near they will rise on the wing, glide

at a short distance above the ground and settle again at some distance to recommence running along on the shore. The flight of the Ringed Plover is even, swift, performed by regularly timed beats of the wings; and as a flock pass through the air they perform various evolutions before they alight, now exposing the dark upper surface, and now the white underparts to the spectator, the entire flock moving regularly together. They frequently consort with other species of Waders, such as Sandpipers, Redshanks, and others; but this is only when they are scattered about on the ground; for on the wing they keep apart. To some extent, even with us here in England they must be nocturnal in their habits; for they are said to feed by moonlight; but in the light balmy nights in the high north I used to find them on the shores at all hours of the night. With us the flocks break up in April, when the birds have paired; and each couple then resort to the place they have selected for the purpose of nidification, the major portion remaining on or near the sea-shore, others, again, taking up their quarters on the shores of inland sheets of water or on the banks of rivers, and in some instances in sandy localities at some distance from water. I have frequently taken the nest of the present species, both on the south coast of England and on the shores and small islands that fringe the coasts of the Gulf of Bothnia.

The nest itself is nothing but a small depression in the ground, frequently just beyond the reach of the water; and occasionally a few fragments of shells are collected in this hollow, in which the eggs, four in number, are deposited, they being placed with the pointed ends towards the centre. Eggs of the Ringed Plover in my collection, from various parts of Europe, are clay-yellow or clay-buff with an ochreous tinge, and are marked with underlying blackish grey shell-markings and clearly defined blackish surface-spots and blotches, which are, as a rule, tolerably generally scattered over the surface of the egg—some, however, being but sparingly, and others tolerably profusely spotted. In size those in my collection vary from $1\frac{10}{40}$ by $\frac{38}{40}$ to $1\frac{14}{40}$ by 1 inch.

When the young are hatched they are able at once to run; and at the approach of danger they squat and hide on the ground, their colour assimilating so completely to the surroundings that it is almost impossible to distinguish them. When she has eggs, and especially when in charge of her young brood, the female is most watchful and anxious, and will employ all means in her power, such as feigning to be wounded, &c., in order to entice away the intruder from the vicinity of her treasure; and when successful in her efforts, and she has induced him to follow her to a safe distance, she will suddenly rise into the air and fly off, uttering her joyous note as if rejoicing at the success of her ruse.

The food of the Ringed Plover consists entirely of small marine animals and insects. Mr. Robert Collett writes to me as follows:—"In the stomachs of specimens I shot in Finmark in 1872, I found Amphipoda, young *Littorinæ*, Coleoptera, and fine gravel. In some individuals from Jæderen, in the south of this country, I found in one exclusively Coleoptera (especially *Otiorhynchus ovatus*) and traces of small mollusks, and in another the young of *Littorina obtusata*, large Diptera, and some few Coleoptera and their larvæ."

The specimens figured are an adult male, in full breeding-plumage, and a young bird of the year, both being the specimens above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, c.* Greenland (*Erichsen*). *d*, ♂, *e*, ♀. Pagham, April 1872 (*R. B. Sharpe*). *f*, ♂, *g*, ♂, *h*, ♂, *i, j, k*, ♂, *l.* Pagham, July 1870 (*R. B. Sharpe*). *m*, ♂. Pagham, October 9th, 1865 (*H. E. D.*). *n, juv., o, juv.* Rye, September 8th, 1860 (*H. E. D.*). *p*, ♂. Tarifa, March, 1874 (*L. H. Irby*). *q.* Egypt (*Hemprich and Ehrenberg*). *r.* Djeddah, Red Sea (*S. S. Allen*). *s, juv.* Pagham, July 1870 (*R. B. Sharpe*). *t, juv.* North Germany, July 1871.

*E Mus. H. B. Tristram.*

*a*, ♀. Pagham, September 27th, 1865 (*J. H. Gurney, jun.*). *b*, ♀. Gennesareth, May 23rd, 1864 (*H. B. T.*). *c*, ♂. Natal.

*E Mus. C. A. Wright.*

*a*, ♂. Malta, November 5th, 1869 (*C. A. W.*). *b*, ♂. Malta, May 21st, 1869 (*C. A. W.*). *c*, ♀. Malta, May 4th, 1871 (*C. A. W.*).

*E Mus. J. E. Harting.*

*a*, ♂, *b*, ♀. Northumberland, May 1863 (*Beadnall*). *c*, ♂. Yarmouth, May 1866 (*Carter*). *d*, ♂, *e*, ♀. Kingsbury, August 1867 (*J. E H.*). *f*, ♂, *g*, ♀. Brighton, September 18th, 1867. *h*, ♂, *i*, ♀, *j*. ♂, *k*, ♀, *l*, ♂, *m*, ♂. Pagham harbour, December 3rd, 1867 (*D. Weight*). *n*, ♂, *o*, ♀. Pagham harbour, May 10th, 1871 (*J. E. H.*). *p*, ♂. Barnstaple, September 24th, 1870 (*J. E. H.*). *q.* Dieppe, May 1868 (*Deyrolles*). *r*, ♂. Gibraltar, April 19th, 1872. *s*, ♂. Valentia, April 30th, 1872 (*H. Saunders*). *t*, ♀. Corfu (*Wilson Saunders*). *u.* Morocco (*Boucard*). *v, juv.* Cape Verd, September 1872 (*Boucard*). *w*, ♂. Knysna, November 29th, 1865 (*C. J. Andersson*). *x*, ♀. Walvisch Bay, October 22nd, 1863 (*C. J. Andersson*). *y, juv., z, juv., aa, juv.* Pagham.

## Genus EUDROMIAS.

*Pluvialis* apud Brisson, Orn. v. p. 54 (1760).
*Charadrius* apud Linnæus, Syst. Nat. i. p. 254 (1766).
*Eudromias*, C. L. Brehm, Vög. Deutschl. p. 545 (1831).
*Morinellus* apud Bonaparte, Cat. Parzud. p. 14 (1856).

It is difficult to say whether other species besides the Dotterel should be included in the present genus; but, so far as I can ascertain, it stands alone in the structure of its sternum, and *Ægialitis geoffroyi*, *Ægialitis asiatica*, and *Ægialitis vereda*, which have usually been placed with it, certainly belong to the same genus as the Ring-Plovers, as I have ascertained by an examination of the sternum, which agrees with that of *Ægialitis hiaticula*, and differs materially from that of the Dotterel.

The Dotterel inhabits the Palæarctic Region, straggling only in winter into the northern portion of the Ethiopian Region, its precise range, so far as it is known, being given in the following article. It inhabits mountain-sides, moors, and uplands, being, as a rule, but seldom found on the sea-coast. It is generally fearless and tame, so much so as to seem stupid and foolish. It walks and runs with ease and swiftness, and flies well and strongly. Its food consists of insects of various kinds, chiefly coleoptera, and probably also small snails and worms. Its nest is a mere hollow in the moss or grass; and its eggs, always three in number, are light stone-buff, sometimes with a greenish tinge, heavily blotched with black or blackish brown.

*Eudromias morinellus*, the type of the genus, has the bill shorter than the head, rather slender, compressed, the nasal sinus extending about half the length of the bill, which is straight to the end of it, then slightly elevated, and decurved to the narrow, rounded, and sharp-edged tip; nostrils subbasal, linear; wings long, pointed, the first quill longest, the inner secondaries nearly as long as the primaries; tail rather long, slightly rounded; legs moderately long, rather slender; tibia bare for a short distance; tarsus scutellate; hind toe wanting; anterior toes rather short, slender, marginate, scutellate, the outer and middle toes connected at the base by a web; claws short, curved, slender, rather obtuse, that on the middle toe with the inner edge dilated.



**DOTTEREL.**

EUDROMIAS MORINELLUS

# EUDROMIAS MORINELLUS.

(DOTTEREL.)

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*Charadrius morinellus*, Linn. Syst. Nat. i. p. 254 (1766).
*Charadrius sibiricus*, Lepech. Itin. pl. 6 (1771–1780).
*Charadrius tartaricus*, Pall. Reise, ii. p. 715 (1773).
*Eudromias morinella* (L.), C. L. Brehm, Vög. Deutschl. p. 545 (1831).
*Eudromias montana*, C. L. Brehm, tom. cit. p. 546 (1831).
*Eudromias stolida*, C. L. Brehm, tom. cit. p. 547 (1831).
*Pluvialis morinellus* (L.), Macgillivr. Man. Brit. Birds, ii. p. 50 (1842).
*Morinellus sibiricus* (Lepech.), Bp. Cat. Parzud. p. 14 (1856).

*Amadan mointich*, Gaelic; *Pluvier guignard*, French; *Dummer Regenpfeifer*, German; *Piviere tortolino*, Italian; *Morinel Plevier*, Dutch; *Pomerantzfugl*, Danish; *Fjällpipare*, Swedish; *Pomerantsfugl*, Norwegian; *Keräjäkurmitsa*, Finnish; *Zuek glupöi*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 822; Werner, Atlas, *Courreurs*, pl. 12; Kjærb. Orn. Dan. taf. xxx.; Fritsch, Vög. Eur. taf. 33. figs. 16, 17; Naumann, Vög. Deutschl. taf. 174; Sundevall, Sv. Fogl. pl. 37. fig. 1; Gould, B. of Eur. pl. 295; id. B. of G. Brit. iv. pl. xliii.; Schlegel, Vog. Nederl. pl. 212; Roux, Orn. Prov. pls. 273, 274.

*Ad. ptil. æst.* capite suprà nigro, frontis plumis albo marginatis, fasciâ purè albâ supra oculos utrinque ad nucham ductâ: nuchâ, dorso et scapularibus grisescenti-fuscis, his ochrascente ferrugineo marginatis: remigibus saturatè griseo-fuscis, remige extimo rachi albâ, secundariis pallidioribus, nonnullis albido marginatis: caudâ saturatè griseo-fuscâ, rectricibus omnibus, duabus centralibus exceptis, albo apicatis, exterioribus quoque margine exteriore albis: mento et gulâ superiore albis: regione auriculari et collo imo saturatè cinereis, fasciâ pectorali transversâ albâ: pectore et hypochondriis saturatè ferrugineis: abdomine nigro, posticè et crisso albis vix cervino tinctis: rostro nigricante: iride fuscâ: pedibus brunnescenti-olivaceis.

*Ad. ptil. hiem.* capite suprà et nuchâ albicantibus ochrascente ferrugineo lavatis et densè nigricante striatis, fasciâ supra oculos angustiore et flavicante cervino lavatâ: corpore suprà grisescenti-fusco, marginibus pennarum ochrascenti-fulvidis: mento albo, gulâ et capitis lateribus albicantibus, grisescente fusco striatis: pectore sordidè grisescenti-fuliginoso, flavicante cervino notato: corpore subtùs imo albicante, hypochondriis griseo lavatis, et subcaudalibus flavicante cervino lavatis.

*Adult Female in summer* (Stockholm Market, 25th May). Upper part of the head deep black, the feathers on the forehead broadly margined with white; a broad white streak extends from the lore, over the eye, to the occiput, where it meets that on the other side; hind neck, back, and upper parts generally greyish brown, scapulars and feathers on the lower back margined with fulvous yellow, the scapulars

and inner secondaries faintly glossed with green; quills dark greyish brown, the shaft of the first primary white, secondaries rather paler, some of the short ones margined with white; tail dark greyish brown, darker towards the tip, all except the two central feathers tipped with white, the lateral more extensively and having also the outer web margined with white; chin and upper throat white; ear-coverts and lower neck all round pale greyish brown; at the junction of the neck and breast is a transverse white band, narrowly edged above with black; fore part of the breast and flanks rich yellowish red; lower breast and upper portion of the abdomen deep black; lower abdomen and under tail-coverts yellowish white; under wing-coverts dull greyish: bill blackish; iris brown; legs brownish green, toes blackish grey, heel orange, claws black. Total length about 9–9·5 inches, culmen 0·85, wing 6·0, tail 2·85, tarsus 1·5.

*Adult Male.* Resembles the female, but is not quite so richly coloured, and, if any thing, is a trifle less in size. I have, however, seen males scarcely distinguishable from females in richness of coloration, though, as a rule, the latter are much the brighter-plumaged of the two sexes.

*Adult Male in winter* (Palestine, 2nd February). Crown and nape whitish, washed with rusty yellow and closely streaked with blackish; the white streak over the eye and to the nape smaller than in the summer dress, and washed with yellowish; upper parts as in the summer, but paler, and more marked with fulvous yellow; tail and wings paler and duller than in the summer dress; chin white; throat and sides of the head whitish, streaked with dull greyish brown; breast dull smoky grey, marked with yellowish buff; rest of the underparts dull white, on the flanks washed with grey, and on the under tail-coverts with yellowish buff.

*Nestling, one day old* (Kautokeino, Lapland). Covered with close short down; head and neck white, washed here and there with rufescent ochre; centre of the crown black, slightly variegated with pale rufous; from the centre of the bill to the crown a black line; from the lores to the eye a black line, and one below and behind the eye passing round the back of the head; upper parts variegated black, rufescent ochre, and white; underparts, white on the breast slightly washed with rufous buff.

The range of this Plover does not extend beyond the Palæarctic Region during the summer season; but in the winter it migrates southward to North Africa.

In Great Britain, where it used to be by no means a rare species, it is now becoming exceedingly scarce; and unless legislation, which has already saved many species from impending extinction, by means of the Bird-protection Act, soon interferes, it will, ere long, be an almost unknown bird with us. It is rarer on the western side of England than it is on our east coasts during the two seasons of passage. Mr. E. Hearle Rodd says (Zool. 2nd ser. p. 1423), "the common Dotterel seldom makes its appearance in Cornwall; we find them sometimes on our open moors near the sea, and generally in the autumn. I observed two in the bird-stuffer's hands, which came from the Lizard district near Helston;" and, again, in his list of the birds of Cornwall, he states that one was killed in Sancreed. Yarrell (Brit. Birds, ii. p. 485) says that "it has not been seen more than once or twice in Cornwall, and only occasionally in Devonshire, but oftener in Dorsetshire. In Wiltshire, Berkshire, Sussex, Hertfordshire, Cambridgeshire, Suffolk, and Norfolk, small flocks, or trips as they are called, are seen in the spring on their way to their breeding-grounds. . . . . On the chalk-hills about Royston, on the borders of Hertfordshire and Cambridgeshire, these birds have been observed for many years to make their first

appearance in each season by the 20th of April; they are seen for about ten days, some probably moving on to the northward, and their places being supplied for a time by other arrivals from the south. . . . . From these counties the birds pass on to more northern localities, and are seen in Lincolnshire, Derbyshire, Yorkshire, Lancashire, Westmoreland, Cumberland, Northumberland, and various parts of Scotland, always inhabiting high ground." Both Heysham and Montagu say that it breeds on the Mendips, in Somersetshire, as it doubtless did in their time; but since then it has been nearly exterminated; and Mr. Cecil Smith writes to me that its occurrence at all in that county is a rare event, and the last authentic instance he knows of was in May 1869, when one was shot on the Steep Holmes, and a few others seen there and about Weston-super-Mare. I observe, however, a notice in the 'Zoologist' for 1871 by Mr. F. D. Power, who writes as follows:—"On the 1st of May 1869, I obtained five Dotterels, shot the day previous on the Mendips. These birds are said to occur here very seldom; however, on the 21st of August, I saw one specimen and heard another on the same hill where the five were obtained the year previous." If the few Dotterel that visit the Mendips meet with the same warm reception which welcomed the unfortunate "trip" referred to by Mr. Power, it can scarcely be wondered at that they no longer breed there, but prefer to seek safer quarters. Mr. J. Rocke records an instance of one having been killed at Lutwyche Hall, in Shropshire. On the east coast it is occasionally seen in the spring and autumn, but much less frequently than used to be the case. In Norfolk, Mr. Stevenson says, it is by no means so numerous as in former days; yet it still visits that county at the end of spring, and again a few months later, frequenting the warrens and fens of the western parts of the county. And Mr. Cordeaux (B. of the Humber Dist. p. 91) speaks of it as "an occasional spring and autumn visitant, arriving in certain favourite localities in the north wolds about the third or fourth week in April, and in the Humber marshes during the first week in May, where they continue till about the third week, and then depart northward."

Although it nested in the lake-districts when Heysham wrote his interesting account of its breeding-habits in Cumberland, it now no longer does so, that I can ascertain. Captain Feilden wrote to an anonymous correspondent of the 'Field' who appeared to have lately seen this species breeding near Keswick, but could elicit no response to his inquiries. Mr. A. G. More, in his paper on the breeding-range of our British birds (Ibis, 1865, p. 431), writes as follows:—"With respect to Derbyshire, Sir John Crewe informs me that he has often heard from his gamekeeper that it was quite easy, fifteen or twenty years ago, to shoot Dotterels, when they had young, on the Derbyshire hills, bordering on Staffordshire. These hills are now nearly all under cultivation; and Sir John Crewe believes that the Dotterel no longer stays to breed, though small flocks are still seen in May. . . . . The Rev. H. B. Tristram tells me that a few pairs linger on the borders of Durham and Cumberland, and that he has heard of nests being taken on the top of Cheviot, where he himself has seen the birds. . . . . Mr. T. Edward finds the nest in Aberdeen and Banff shires; and Mr. W. Dunbar marks the bird as breeding regularly in Sutherland and Caithness." In Scotland, though, as elsewhere, its numbers have greatly decreased, it still breeds in some of the less-frequented localities; and I have seen both the eggs and the young birds in down obtained there by Mr. E. Booth, of Brighton; and I give below some details of its nidification in Scotland (for obvious reasons suppressing all information

respecting locality), communicated to me by Captain H. W. Feilden, to whom, I may add, I am indebted for most valuable assistance in collecting the materials for the present article. Mr. Robert Gray, writing respecting its occurrence in Scotland (B. of W. of Scotl. p. 254), draws attention to the fact that on consulting the old parish records published towards the close of the last century, most of the compilers had, to some extent, a personal knowledge of the bird in Scotland. One author, writing in 1794, Mr. John Renton, of Chesterbank, records that in the parish of Coldingham, Berwickshire, "Dotterel appear in vast numbers on the heights." Various other writers in East Lothian, Fife, Kincardine, Perth, and Aberdeen shires likewise refer to the migratory movements of this bird; and all these records tend to show that it had then been sufficiently common to attract attention. At the present day, however, though the Dotterel may be said to be still regular in its visits to some of the localities just named, it is absolutely necessary for observers to be careful in watching for its appearance. In some parts of Berwickshire, for example, the flocks, besides being much reduced in numbers, never remain longer than three days in their old haunts, which in the early part of the present century they frequented during as many weeks. Indeed, in other parts of the same county it would almost seem to have discontinued its short visits. . . . . In the western counties I have been quite unable to trace the occurrence of the Dotterel, except as a mere straggler. . . . . Bearing in mind what has been said on the now comparative scarcity of this bird in its accustomed halting-places during its migratory movements, it is not to be expected that the few breeding-localities from the heights of Dumfries to Inverness-shire will be otherwise than scantily occupied. I am doubtful, indeed, if more than a dozen pairs are to be found nesting in the whole of Scotland." The late Dr. H. L. Saxby, in the 'Zoologist' for 1871, records this species as another addition to the Shetland list. "About the middle of June 1869 I observed one among some Golden Plovers upon the hill of Crushafiel, immediately above Balta Sound. Never having seen this species alive, I got a neighbour to come out and shoot it for me. It proved to be an adult male." Mr. Thompson, who thinks that it may possibly breed in Ireland, writes (B. of Ireland, ii. p. 93), as follows:—"The earliest notice of the occurrence of the Dotterel in Ireland appeared in the 'Zoological Proceedings' for 1834, where I mentioned one which had been shot on a high hill at Finnebrogue, near Downpatrick, a few years previously (it was believed, in the month of November). I saw the specimen in the house of Mr. Reid, at Ballygowan Bridge, in the spring of that year, and was told that two others were in company with it when killed. Mr. R. Davis, jun., of Clonmel, has informed me that he obtained a Dotterel which was shot on the summit of the high mountain, Shev-na-mon, about the 24th of June, 1835, in company with Golden Plover. That gentleman himself ascended the mountain on the 18th of August, and saw at some little distance two birds which he believed to be Dotterels: he imagined that the species might be breeding there. He subsequently favoured me with the examination of the skin of one shot in another locality, on the mountains in the 'Liberties of Clonmel' on the 24th of August, 1840: it was in a state of moult, and had lost many feathers; but sufficient remained to prove its being a male and at least one year old. On the 18th of August, 1841, two of these birds, believed to be an old and a young one, were seen by my correspondent hanging in a cook's shop in Clonmel. Although positive information could not be obtained respecting them, he had little doubt of their having been shot near the town. The preceding information leads to the

belief that the Dotterel may, in very limited numbers, annually migrate to the elevated mountains of the county of Tipperary to breed. If so, they are by far its most southern breeding-haunts in the British Islands."

It has not been met with in the Færoes, Iceland, or Greenland, but is common in the northern portions of Scandinavia, and breeds in some numbers both in Northern Norway and Swedish Lapland. Mr. Robert Collett informs me that "in Norway it occurs during the spring migration in large flocks on the south coast, from Lindesnæs to the Lower Jæderen, and here and there on the western and northern coasts of that country. It spreads over the more elevated fells during the nesting-season up to the Russian frontier; and in the southern districts it is found above the boundary of the birch-growth, more especially on the Dovre and the Langfjeld, down to the Norefjeld in Krydsherred, and Hekfjeld in Thelemarken (59° N. lat.). In the autumn it migrates southward the same way that it passes north in the spring, but more to the eastward. It seldom, however, visits the south-eastern lowlands during passage."

In Sweden it occurs very rarely in the eastern portions during passage; but in the Stockholm Museum there are two specimens—one shot in Södermanland in May 1832, and the other obtained at Lycksele in June 1834. It occurs in Finland, during the breeding-season, only in the extreme northern districts, but is met with in the southern and central districts during passage, less commonly, however, in the autumn than in the spring; and it would appear that it is not a common bird in that country. My collector has shot it at Archangel, where it appears to be of uncommon occurrence; but both Mr. Gillett and Von Heuglin met with it on Novaya Zemlya. The former writes (Ibis, 1870, p. 306) as follows:—"On the 5th of August, at Matthew's Straits, I saw an old bird of this species, with a nearly full-grown young one, which latter I shot. I subsequently saw some more by a river on the eastern side;" and Von Heuglin says that he "found small flocks near Yugorsky Strait. At the beginning of September the young had still some down on the back of their heads; the adults change even the small feathers." Professor Malmgren includes it in his list of birds occurring in Spitzbergen on the authority of Professor Keilhau, who found one dead on a roof at Stans Foreland; but there appears to be some doubt as to the correctness of this identification. In Central Russia it is said by Mr. Sabanäeff to be rare, and he only once observed it near Moscow on passage; in the Ural it probably breeds in the Pavdinskaya Dacha; but he never observed it on passage near Ekaterinburg, or further to the south; Eversmann says that it breeds in the mountains of Alatau, in about 44° or 45° N. lat. It occurs in North Germany and the Baltic Provinces during the two seasons of migration, but is not very common; and it passes through Denmark on its way northward early in May, and again on the return migration late in August or early in September, but does not remain to breed there. In Holland, Belgium, and the north of France it occurs regularly during the seasons of passage, in May and again in August; and in Southern France it is stated by Dr. Companyó to remain throughout the winter in the department of the Pyrénées Orientales.

In Spain it is, Mr. Howard Saunders writes, "a regular visitor on migration, but by no means abundant at any time;" and Dr. A. E. Brehm says that it is very rare, and that his brother only once obtained one at Mar-menor, near Cartagena, on the 31st March. It is found in Italy; and Salvadori speaks of it as being a regular winter visitant to Sardinia, where it is

met with from the autumn to the spring. Doderlein states that it is very rare in the district of Modena; and in Sicily it is never very abundant, and remains but for a short time during passage. In Malta, Mr. C. A. Wright remarks, though common in October and November during the autumn passage, it is but rarely met with in the spring; and Captain Feilden, who is at present in that island, writes to me as follows:—"I have come to no satisfactory conclusion why this bird should be abundant in Malta during the autumnal, and very rare during the vernal migration. Indeed I have not yet come across it at the latter season. In the fall, Malta appears to be a favourite resting-place for this species when crossing to Africa. My note-book gives the 23rd of August as the earliest date on which I observed it, and the 11th December the latest. During the commencement of November 1873, this species appeared very plentiful in the Valetta market, its numbers culminating on the 8th of that month, when more than one hundred were exposed for sale. Many Dotterels killed here during the early part of the autumn passage retain traces of the breeding-plumage. On the 17th September, 1874, my attention was attracted to an example conspicuous by the chestnut-colour of its underparts, nearly as rich as in specimens I have procured in breeding-plumage." In Southern Germany, curiously enough, it remains to breed in the mountain districts. The Ritter von Tschusi-Schmidhofen writes to me that "its distribution in Austria is peculiar. It breeds not only in the Riesengebirge and Styria, but also in Siebenbürgen. Bielz met with it on the 28th of June, 1863, in the Zibins Mountain on a small moor near the highest point of the Csindrell, about 7000 feet above the sea. The male was shot, and two young birds about fourteen days old caught alive; but the female escaped. All three are in the Hermannstadt Museum." He also points out (J. f. O. 1870, p. 272) that Pastor Hanf found it breeding in the most elevated portions of the Weit-Seethaler and Judenburger Alps, in Styria, and himself caught a young one there, and also in 1862 took three eggs. In the 'Journal für Orn.' 1869, p. 231, he states that the foresters told him that it used to be common on the Weisse Wiese and Brunnberg, and flocks of thirteen to fifteen individuals used to be seen, but it is rapidly decreasing in numbers. In 1865 Herr von Homeyer killed a specimen, and obtained a nest on the Rennerbaude. Dr. Fritsch states (J. f. O. 1871, p. 383) that it is met with throughout Bohemia during the autumn migration; and he met with it in September 1851 near Schlan. I have seen it in Wallachia in the early spring, and have specimens from the neighbourhood obtained in April and November. In Greece it is met with but very rarely during passage; and Von der Mühle states that he only once met with it, having found six immature specimens exposed for sale in October 1836. It appears to pass further to the eastward during its passage; for Canon Tristram met with it commonly in Palestine, and writes (Ibis, 1868, p. 323) respecting this species and its allies as follows:—"No description can give any idea of the continuous flocks which overspread the whole of the southern wilderness during three days' ride from the Arabah to Beersheba. Hour after hour the birds ran almost among our horses' feet; and we shot as many as we required for the day's provision within half an hour. There were about ten of the common Dotterel for one of the other species; but all seemed mingled indiscriminately. . . . . The myriads of *Helices*, clustering on all the bushes and on every straw, till the whole looked like a sheet of white blossom, no doubt provided sustenance for all." The winter abode of this bird appears to be the north of Africa, on the east extending down the western shores of the Red Sea, according

to Von Heuglin, who remarks (Syst. Ueb. p. 56) that it is met with during winter in Egypt and along the shores of the Red Sea. In 1851 he saw a large flock of Dotterels on the desert between Sakkara and the Fayoom. Captain Shelley does not appear to have met with this species during his several visits to Egypt; we may therefore suppose it is not common in the Fayoom or valley of the Nile. Canon Tristram, writing on the ornithology of the Sahara (Ibis, ii. 1860), mentions that "vast flocks of Dotterels in winter plumage occurred frequently during our wanderings, wherever lalpha (*Andropogon*) or other desert vegetation harboured beetles. They were very tame, and in good condition. It is of course only a winter visitant." Mr. J. H. Gurney, jun., also met with it commonly at Ain Oussera, and says that specimens shot on the 13th March had just begun to assume their summer dress; and Mr. Taczanowski writes (J. f. O. 1870, p. 54) that he met with numerous flocks on the hills between Ghelma and Constantine, but nowhere else. I do not find any record of its occurrence in Southern Africa, and do not believe that it passes south of the equator.

To the eastward it extends as far as South-eastern Siberia, and probably occurs in Japan, as Cassin includes it amongst the species obtained in a collection made at Hakodadi, though Mr. Swinhoe suggests (Ibis, 1863, p. 444) that Cassin may have made a mistake.

Mr. Blanford includes it in his notes on the avifauna of Persia, a specimen having been obtained at Kázrún, west of Shiraz, in the month of January. Severtzoff, who found it in Turkestan, writes that it occurs during passage in the north-eastern and north-western portions of that country. In Siberia it was met with by Von Middendorff, who observed it on the Taimyr river, in 73¾° N. lat., on the 4th June, but adds that it resorted to the Byrranga Mountains to breed, in the valleys of which it was extremely numerous. On the 3rd August the young were fledged; and on the 15th all had left. On the 24th May he met with it on the Boganida; and on the 14th August the last one was seen there.

Dr. Radde says that, on the alpine tundras at the headwaters of the Irkut, he met with it breeding on the 15th June, 1859, at an altitude of 7500 to 8000 feet. On the southern slope of the Munku-Sardik he observed it still higher, at an altitude of 10,000 feet. In June 1855 he saw stragglers in the Kaja valley, near Irkutsk; and during the autumn migration it touches Lake Baikal, where, on the 9th September, he saw it in small parties, or singly near the Possolskish convent. As above stated, it has been recorded from Japan by Cassin, but does not appear to have been met with in China or India.

Naturally the Dotterel is fearless and confiding in its habits, so much so as to have been considered eminently stupid; but continued persecution has rendered it, in our island at least, much more wary. It is more of an upland bird than a shore- or marsh-haunting species, and frequents heaths, pastures, and fallow lands, where it feeds on insects of various kinds, and invariably resorts to the mountains for the purposes of nidification. It is doubtful if it now breeds any where in England, though formerly it used to do so in the Lake district; and some most excellent notes were published by Mr. T. C. Heysham in Charlesworth's 'Magazine of Natural History' (ii. p. 300), which I cannot do better than transcribe as follows:—"In the neighbourhood of Carlisle, Dotterels seldom make their appearance before the middle of May, about which time they are occasionally seen in different localities, in flocks which vary in number from five to fifteen, and almost invariably resort to heaths, barren pastures, fallow

grounds, &c., in open and exposed situations, where they continue, if unmolested, from ten days to a fortnight, and then retire to the mountains, in the vicinity of the lakes, to breed. The most favourite breeding-haunts of these birds are always near to or on the summits of the highest mountains, particularly those that are densely covered with the woolly-fringed moss (*Trichostomum lanuginosum*, Hedw.), which, indeed, grows more or less profusely on nearly all the most elevated parts of this alpine district. In these lonely places they constantly reside the whole of the breeding-season, a considerable part of the time enveloped in the clouds, and almost daily drenched with rain or wetting mists so extremely prevalent in these dreary regions; and there can be little doubt that it is owing to this peculiar feature in their economy that they have remained so long in obscurity during the period of incubation. The Dotterel is by no means a solitary bird at this time, as a few pair usually associate together, and live to all appearance in the greatest harmony. These birds do not make any nest, but deposit their eggs (which seldom exceed three in number) in a small cavity on dry ground covered with vegetation, and generally near a moderate-sized stone, or fragment of rock. In early seasons old females will occasionally begin to lay their eggs about the 26th of May; but the greater part seldom commence before the first or second week in June. It would appear, however, from the following facts that they vary exceedingly in this respect. On the 19th July, 1833, a perfect egg was taken out of a female which had been recently killed on Robinson, and on the 26th of May, 1834, I received four Dottrels from Keswick which had been shot on Great Gavel the day before: in the ovary of one of them I found an egg almost quite ready for exclusion, being a difference of nearly eight weeks. So great a discrepancy, in all probability, is of very rare occurrence; yet it will subsequently appear that eggs recently laid and a young bird a few days old were both found on the same day at no great distance apart. The males assist the females in the incubation of their eggs. How long incubation continues I have not yet been able to ascertain; but I am inclined to think that it rarely lasts much longer than eighteen or twenty days. A week or two previous to their departure they congregate in flocks, and continue together until they finally leave this county, which they do sometimes during the latter end of August, at others not before the beginning of September. A few birds are, no doubt, occasionally seen after this period; but they are either late broods or birds that are returning from more northern latitudes. This autumn I visited several breeding-stations on the 25th of August, and again on the 2nd of September; but in neither instance could I observe a single individual. Anxious as I have been for several years past to secure the eggs of the Dottrel for the purpose of adding undoubted specimens of so rare an egg to my cabinet, as well as to prove beyond all doubts that this bird breeds in Cumberland, yet it was not until the present year that I had the gratification of accomplishing an object which I have had so long in view. After repeated excursions through the lake district this summer for the express purpose, I was so fortunate as to obtain their eggs in two different localities—namely, three on Whiteside, contiguous to Helvellyn, on the 29th of June, and two on the 5th July on Robinson, in the vicinity of Buttermere. The former had been incubated twelve or fourteen days, the latter were only recently laid; and in both instances the birds were seen to leave their eggs; one, on quitting them, immediately spread out its wings and tail, which it trailed on the ground a short distance, and then went away without uttering a single note. On this day [5th July, 1835] a young bird, a few days old, was also captured. Having spent a considerable portion of

several days on Robinson, in company with a very able assistant, searching for the eggs of the Dottrel, I had of course ample opportunities of observing their manners; and I flatter myself that the following particulars will be interesting to some of my ornithological readers:—On the 3rd July we found three or four pairs near the most elevated part of this mountain; and on all our visits thither, whether early in the morning or late in the afternoon, the greater part were always seen near the same place, sitting on the ground. When first discovered they permitted us to approach within a short distance, without showing any symptoms of alarm; and frequently afterwards, when watching their movements from a few paces off, some would move slowly about and pick up an insect, others would remain motionless, now and then stretching out their wings, and a few would occasionally toy with each other, at the same time uttering a few low notes, which had some resemblance to those of the common Linnet (*Linaria cannabina*); in short, they appeared to be so very indifferent with regard to our presence, that at last my assistant could not avoid exclaiming, 'What stupid birds these are!' The female that had young, nevertheless, evinced considerable anxiety for their safety whenever we came near the place where they were concealed, and, as long as we remained in the vicinity, constantly flew to and fro above us, uttering her note of alarm.

"As soon as the young birds were fully feathered, two were killed for the purpose of examining their plumage in this state; and we found that after they had been fired at once or twice they become more wary; and eventually we had some little difficulty in approaching sufficiently near to effect our purpose. The moult appears to commence somewhat early in old birds; a male that was killed on the 25th of July was completely covered with pen-feathers, and the belly, from incubation, almost entirely bare. The stomachs I dissected were all filled with the elytra and remains of small coleopterous insects, which in all probability constitute their principal food during the breeding-season.

"These birds, I understand, are getting every year more and more scarce in the neighbourhood of the lakes; and from the numbers that are annually killed by the anglers at Keswick and the vicinity (their feathers having long been held in high estimation for dressing artificial flies), it is extremely probable that in a few years they will become so exceedingly rare that specimens will be procured with considerable difficulty. I have subjoined the names of some of the principal mountains in this county on which Dottrels have been known to breed, and I have also added, as far as practicable, their elevation above the level of the sea, under the idea that this information may prove of some utility to the naturalist who may hereafter feel inclined to investigate the manners of this species in the same district." The mountains enumerated by Mr. Heysham are Helvellyn, Whiteside, Whatson Dod, and Great Dod 3055 feet above the sea-level, Saddleback 2787 feet, Skiddaw 3022 feet, Carrock Fell 2110 feet, Grassmore 2756 feet, Robinson 2292 feet, Gold Scalp 1114 feet, Great Gavel 2925 feet.

As above stated, the Dotterel still breeds in Scotland; and Captain Feilden, who took its nest on the borders of Perth- and Inverness-shires on the 16th June 1873, has favoured me with the following notes:—"The top of the mountain we had ascended was a flattish oval, about three quarters of a mile long by a quarter of a mile broad; being fully exposed to the sun, every scrap of snow had disappeared from its summit, which was clad with soft moss (*Trichostomum lanuginosum*) intermixed with dwarf cranberries and other alpine plants; small rounded fragments of

grey granite lay scattered over the surface. Its eastern and southern faces are rocky and precipitous, and favourite ground for Ptarmigan, of which species we found a nest containing three eggs; the female sat so closely that she allowed me to place my hand within two inches of her beak before she fluttered off the eggs, and then took up a position some twenty feet off, watching our proceedings. Her confidence was not betrayed; for we did not take the eggs, and had the pleasure of seeing her return to her nest before we had left the spot thirty yards. The nest of the Ptarmigan is a very scanty affair, merely a small depression scooped in the moss, and lined with a few blades of grass and a few feathers of the bird intermingled.

"For many years past a single pair of Dotterels bred regularly on the summit of this mountain; but three years ago a gentleman during the shooting-season, out after Ptarmigan, and not knowing the rarity of the species, killed the two old birds and their brood; during 1871 and 1872 no Dotterel appeared on this hill; but as two pairs were known to have bred last year on a neighbouring mountain, we had strong hopes that they might have returned to their old breeding-ground. Nor were we disappointed; for after traversing the top of the hill in line for a short time, Harvie-Brown descried one of the birds, which rose not far from him, and flew past me, quite near enough to reveal the rich chestnut on the breast. Marking the spot whence the bird rose, the keeper and I proceeded on, leaving my companion hid as well as the nature of the ground would permit; after waiting above an hour the bird returned; but, Harvie-Brown failed to mark it to its nest. We then adopted the plan of beating the ground closely; but, after traversing several acres, we did not discover the object of our search. Again retiring to a distance of half a mile, we gave the birds a respite of an hour or so. It was about four in the afternoon when I was despatched to try my luck. Skirting the top of the mountain, I walked slowly to the spot where we had a suspicion the nest must be, but from the opposite side to the direction we had taken on last leaving. Lying down behind a small boulder, in a short time I noticed the hen Dotterel threading her way amongst the mounds and hillocks, and crouching behind stones; when running, and when she suspected my eye was on her, her drawn-in neck and body bent to the ground reminded me much of the gait of a Corncrake; but from the anxiety she evinced, and the way in which she circled round, sometimes to my rear and then again to my front, always keeping a distance of some fifty yards from me, I felt convinced that I was close to the nest. Moving off about a hundred yards, I lay flat on the ground; the bird seemed much relieved, assumed an upright carriage, ran to the tops of the little mossy hillocks, looked around, then picked up insects, or snapped at them on the wing. When she thought that the watcher was quite misled, she again assumed a stooping gait; crouching to the ground she ran rapidly behind a small grey stone, when I saw her settle. Now I felt confident that I had the nest. Never taking my eyes off the spot, I was not long in getting over the intervening hundred yards; but until she rose from her eggs, within six feet of me, I could not recognize her from the surrounding ground. She fluttered off her nest as if wounded, and remained calling within twenty yards, the note somewhat like that of the Golden Plover, but much lower. The eggs, three in number (the full complement), were deposited in a small hollow made by the bird in the moss, without lining of any sort. Marking the spot with a handkerchief, I ran back to my companions, and we all had the pleasure of seeing the bird leave her nest again, and the eggs *in situ*. The eggs turned out to be deeply incubated. Owing to the similarity in the colour of

this bird to the ground that it affects, it is a difficult matter to watch the Dotterel to its nest, and when on its eggs a person might walk within a few feet of it without seeing it. Fortunately for this decreasing species, the lofty mountain-tops which are its exclusive breeding-haunts in Scotland, are not likely to be often visited by shepherds or keepers during the summer months; there is no herbage to attract the sheep; and, with the exception of the wandering foxhunter, no person is likely to invade the precincts of the Dotterel's nesting-ground until the Ptarmigan- and Blue-Hare shooters go up in the autumn.

"It is a sad fact that the breeding-haunts of this species have greatly decreased in Scotland during the last quarter of a century, owing to the indiscriminate slaughter of these beautiful and unwary birds, when they first land on our shores in the month of May, prior to their proceeding to the mountains. Macgillivray mentions five Scottish counties in which the Dotterel bred regularly in his days, viz. Forfar, Kincardine, Aberdeen, Banff, and Moray; and Mr. W. Dunbar and the late Mr. St. John have marked this bird as breeding regularly in Sutherland and Caithness. My friend Mr. Harvie-Brown, who passed three breeding-seasons in succession in Sutherland, the last being 1869, informs me that he never met with the Dotterel in that county, nor could he, after the most diligent inquiry, gain any satisfactory information that the bird now bred there, though twenty-five years ago it was by no means an uncommon occurrence; and I think that it is doubtful if more than a dozen pairs are now to be found nesting in the whole of Scotland." Captain Feilden further calls my attention to some notes read at the sixth meeting of the Natural-History Society of Glasgow in February 1872, by Mr. John Bateson, respecting the breeding of the Dotterel in Ross-shire, from which it appears that it breeds on two separate hills in the west, and also on Ben Wyvis.

Mr. Collett, in a letter just to hand, informs me that in Norway it breeds in the mountain plateaux here and there up nearly as high as the line of eternal snow, chiefly affecting localities where the ground is flat and stones are scattered about. The eggs, three in number, are placed on a small heap of *Cladoniæ*; and the old bird will not leave her nest until almost trodden on, when she will run off, and immediately begins to feign lameness, in order to entice away the intruder.

I possess a tolerably large series of the eggs of this species, obtained in Norway and Lapland, which are light stone-buff or dull buff, with a greenish tinge (the latter rarer than the former), and are very distinctly blotched with large black surface-marks; and there are in some few specimens a very few underlying dark purplish shell-markings. In one or two the larger end is so closely blotched as to nearly hide the ground-colour, but the rest of the egg is less marked with dark colour. In size those in my collection vary from $1\frac{21}{40}$ by $1\frac{2}{40}$ to $1\frac{24}{40}$ by $1\frac{5}{40}$ inch.

Insects of various kinds and their larvæ appear to constitute the food of this bird; and, referring to specimens shot by him, Mr. R. Collett writes to me as follows:—"In the stomachs of individuals shot in June 1871 on the Dovre, I found coleoptera (chiefly of the genus *Bembidium*), larvæ of *Elateres*, *Lumbrici*, and fine gravel; in May 1874 I examined some individuals on the same place, and found in the stomachs several leaves (of *Salix*), pieces of straw, insects of different kinds and their larvæ, and gravel."

Mr. Meves has sent to me a copy of some notes communicated to him by Knoblock, of Muoniovaara, a very trustworthy collector, from which I translate the following particulars:—

"The Dotterel is found and breeds high up in the fells near Kautokeino and Lyngensfjeld. About ten years ago a few pairs used to frequent Pallastunturi and Aunastunturi, about four or six miles (Swedish) from here; but I have not seen any there for some years past. Its nest is very hard to find, as the bird sits close until one is within a few yards of the nest, and then slips off and tries to lure the intruder away; but the Laps are not so easily deceived, and soon find the nest by dogged perseverance. This bird is the only Wader here in Lapland which never deposits more than three eggs; and the full complement is usually deposited between the 18th and 30th June." Mr. Meves himself points out that Messrs. Palmén and Sahlberg, who visited Muonioniska in 1867, say that about the 29th May large flocks of this bird arrived, and, after an interval of a couple of weeks, left for the fells, to breed. They were so little shy that they might be caught by the hand; and numbers were snared in hair nooses. On the spring migration, Mr. Meves says, it is but seldom seen in Southern Sweden and near Stockholm. He confirms what Knoblock says respecting this bird only laying three eggs; and out of over fifty clutches which have passed through his hands he never knew one to consist of more than that number. The largest eggs he has had, measured from 45 to 46 by 29 millimetres, and the smallest 36 by 28 and 38 by 27 millimetres.

Most authors give *Eudromias* as of Boie, Isis, 1822; but I have failed to find any mention of this genus prior to 1831, when C. L. Brehm gives it as of Boie, but does not state if, or where, it was published; and I think it probable that Boie never published it prior to that date, especially as I find that Boie, in the 'Isis' for 1822, refers to the Dotterel under the name of *Charadrius morinellus*.

The specimens figured are an adult female from Sweden, in full breeding-dress, and a young bird, in down, from Lapland, and in the background is an adult bird in winter dress—these being also the specimens described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*. Pagham, Sussex, July 1870 (*R. B. Sharpe*). *b*, ♀. Stockholm market, May 25th, 1864 (*Prof. Sundevall*). *c*, ♀. Jockmock, Lapland, May 31st, 1867 (*A. Couttingius*). *d*, ♂. Jutland, June 25th, 1864 (*A. Benzon*). *e*, ♂. Haskeuy, Turkey, November 3rd, 1869 (*T. Robson*). *f*, ♂. Maslak, Turkey, April 4th, 1869 (*T. Robson*). *g*, ♂. Near Beersheba, Palestine, February 2nd, 1864 (*H. B. Tristram*). *h*, ♂. Lake Baikal, July 15th, 1870 (*Dr. Dybowski*). *i, pull.* Porsangerfiord, Norway, July 5th, 1872 (*R. Collett*). *k, pull.* Kautokeino, Lapland, July 1872 (*W. Meves*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. Melbourne, Cambridgeshire, May 10th, 1855 (*H. S.*). *c, juv.* Seville, November. *d, juv.* Granada, December 1872. *e, f*, ♂. Jylland, Denmark, June 25th, 1864. *g*, ♀. Vadsö, June 28th, 1874 (*H. Seebohm*).

*E Mus. H. B. Tristram.*

*a*, ♂. Epworth, May 13th, 1867. *b*, ♀. Lincolnshire, April 26th, 1867. *c*, ♀. Sahara, November 1st, 1856 (*H. B. T.*). *d*, ♂. Palestine, February 1st, 1864 (*H. B. T.*). *e*, ♀. Palestine, February 5th, 1864 (*H. B. T.*).

## Genus PLUVIANUS.

*Charadrius* apud Linnæus, Syst. Nat. i. p. 254 (1766).
*Pluvianus*, Vieillot, Nouv. Dict. xxvii. p. 129 (1818).
*Hyas* apud Gloger in Froriep's Notizen, xvi. p. 279 (1827).
*Cursor* apud Wagler, Syst. Av., genus *Cursor* (1827).
*Ammoptila* apud Swainson, Classif. of B. ii. p. 364 (1837).
*Cheilodromas* apud Rüppell, Mus. Senck. ii. p. 208 (1845).
*Chilodromus* apud Agassiz, fide Gray, Gen. and Subg. of B. p. 110 (1855).

This genus contains only a single species, which inhabits the Ethiopian Region, but rarely straggling into the Western Palæarctic Region. It frequents the shores of rivers, usually where there are large sandbanks, and feeds on worms and insects. It is active and lively in its habits, tripping easily and quickly about the sandbanks; its flight is gliding and swift, and its call-note clear and loud. Its nest is a mere depression in the sand; and its eggs are said to be dull brownish ochreous, spotted and dotted with ash-grey, yellowish brown, and reddish brown.

*Pluvianus ægyptius*, the type of the genus, has the bill much shorter than the head, rather stout, straight, tapering to a point, the culmen gradually decurved to the tip, which is narrow but sharp-edged; nasal sinus short and broad, the nostrils lateral, elongated-oval, basal; wings long, full, the first quill longest, the scapulars long and narrow; at the carpal joint there is a small hard knob; tail moderately long, even; legs rather long, slender, the tibia bare for about one third of its length; tarsus moderate, scutellate; no hind toe, the three anterior toes moderately stout, scutellate above; claws stout, rather short, curved, obtuse.



5

J.G.Keulemans lith

Hanhart imp

**BLACK-HEADED PLOVER.**
PLUVIANUS ÆGYPTIUS.

# PLUVIANUS ÆGYPTIUS.

(BLACK-HEADED PLOVER.)

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*Charadrius ægyptius*, Linn. Syst. Nat. i. p. 254 (1766).
*Le Pluvian*, Buff. Hist. Nat. Ois. viii. p. 104 (1781).
*Green-headed Plover*, Lath. Gen. Syn. Suppl. ii. p. 320 (1787).
*Charadrius melanocephalus*, Gmel. Syst. Nat. i. p. 692 (1788).
*Charadrius africanus*, Lath. Ind. Orn. Suppl. p. lxvii (1801).
*Pluvianus melanocephalus* (Gm.), Vieill. Nouv. Dict. xxvii. p. 129 (1818).
*Pluvianus chlorocephalus*, Vieill. tom. cit. p. 130 (1818).
*Hyas*, Gloger, in Froriep's Notiz. a. d. Geb. d. Nat. u. Heilk. Band xvi. p. 279 (1827).
*Cursor charadroides*, Wagl. Syst. Av. Gen. *Cursor*, sp. 6 (1827).
*Ammoptila charadroïdes* (Wagl.), Swains. Classif. of B. ii. p. 364 (1837).
*Cheilodromas melanocephalus* (Gm.), Rüpp. Mus. Senckenb. ii. p. 208 (1845).
*Pluvianus ægyptius* (L.), Strickl. Ann. & Mag. Nat. Hist. 1852, x. p. 348.
*Pluvianus ægyptiacus* (L.), A. E. Brehm, Journ. f. Orn. 1853, Extrah. p. 102.
*Hyas ægyptia* (L.), Cabanis, Journ. f. Orn. 1854, p. 71.
*Hyas ægyptiaca* (L.), A. E. Brehm, Journ. f. Orn. 1856, p. 329.
*Cursorius ægyptius* (L.), Schlegel, Mus. Pays-Bas, Cursores, p. 14 (1865).

*Ter el temsach*, Arabic.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 918; Savigny, Desc. de l'Egypte, pl. 6. fig. 4; Gould, B. of Asia, part xvii.

*Ad.* pileo, capitis lateribus, collo postico, dorso et fasciâ pectorali nitidè purpureo-nigris, lineâ albâ usque ad nucham et circum pileum ductâ: uropygio albo: tectricibus alarum minoribus et medianis, scapularibus et supracaudalibus canis: caudâ saturatè canâ albo apicatâ: rectricibus omnibus, centralibus exceptis, nigro subapicatis: remige extimo nigro, extùs in parte basali albo, reliquis in parte basali nigris et in parte apicali albis nigro apicatis: corpore subtùs albo, abdomine et gutture rufescenti-cervino lavatis, subcaudalibus rufescenti-cervinis: rostro nigro: iride fuscâ: pedibus cærulescenti-cinereis.

*Adult Male* (Egypt). Crown, sides of the head, hind neck, back, and a band passing round and meeting on the breast, glossy purplish black; a white band passes from the base of the upper mandible round the crown, meeting on the nape; one or two of the black feathers on the back much elongated; rump white; lesser and median wing-coverts, scapulars, and upper tail-coverts dark French grey or blue-grey; tail dark blue-grey tipped with white, all but the central feathers with a black subterminal band; first primary black with the outer web white on the basal half; rest of the quills black on the basal half, then white terminated with black; underparts white, on the abdomen and throat washed with

creamy rufous; under tail-coverts creamy rufescent; bill blackish; iris dark brown; legs blue-grey. Total length about 8·5 inches, culmen 0·9, wing 5·5, tail 2·65, tarsus 1·38.

*Obs.* I do not possess the present species in immature plumage to describe. Von Heuglin states that the young bird differs but slightly from the adult, in having the underparts duller isabelline rufescent and to some extent marked with smoky bars. The young in down is said to be brownish yellow marked with black.

The present species, which is so common on the banks of the Nile, is but seldom seen out of Africa, and has only occurred as a very rare straggler north of the Mediterranean. Dr. C. L. Brehm states (J. f. O. 1854, p. 70) that his son, Mr. Alfred Brehm, on examining a collection of birds formed by the reigning Duke of Coburg-Gotha, saw a pair of the present species, which the Duke informed him he had himself shot on an island off the coast of Spain. With this exception I do not find it recorded from Europe proper; but, as above stated, it is common in Egypt, and is one of the first birds to attract the Nile-tourist's attention. It is, Von Heuglin says, common from the delta into Nubia, rarer on the Blue and White Nile. He observed it singly in the valley of the Takazié, in Abyssinia, and on the Djur river (in 8° N. lat., 25° 30′ E. long.), but not in the true swamp-region, and on mountain-streams. It is a resident, frequenting the low sand islands and flat shores, avoiding the deep canals, salt or brackish water, and overflowed tracts of cultivated ground. Captain Shelley writes (B. of Egypt, p. 235) that it "is plentifully distributed throughout Egypt and Nubia, but is most abundant in Upper Egypt, from Sioot to Thebes, being almost invariably seen in pairs. They never wander far from the river-bank; and when on the wing fly close over the surface of the water, frequently uttering their cry during flight. They look very handsome as they thus skim along the stream on outspread pinions, displaying their distinctly marked plumage to the greatest advantage," Mr. E. Cavendish Taylor also remarks (Ibis, 1867, p. 68):—"This very beautiful bird is abundant all along the Nile above Cairo, wherever the banks of the river are muddy; it avoids rocky ground, and is therefore not so plentiful near Assouan. It was generally in pairs during the month of March; but I know nothing of its nidification. I see no reason to alter my previously expressed opinion (Ibis, 1859, p. 52) that this bird is probably the Trochilos of Herodotus. It has, I think, a better claim to that honour than the Spur-winged Plover (*Hoplopterus spinosus*), because it frequents the same localities as the crocodiles, namely mud- and sandbanks in the middle of the river; whereas the Spur-wing is more generally met with high and dry in the fields, in which it would not be likely to meet with many crocodiles." The Black-headed Plover is also found in North-west Africa, and some distance down the west coast. Loche says that it is of accidental occurrence in Algeria; but he does not appear to have obtained it. There is a specimen in the Berlin Museum from Senegal; it has been recorded by Beaudouin from Bissao, by Gujon from the Gaboon, by Payés from Casamanse; and Mr. J. J. Monteiro says (Ibis, 1862, p. 336) that he saw it running along the sandy banks of the river Quanza, in Angola.

The present species does not appear to range into Asia proper; but it seems to straggle into Palestine; for Canon Tristram says (Ibis, 1868, p. 322) that Mr. Herschell shot one in the Jordan valley.

In habits the Black-headed Plover is very lively and by no means shy, being perhaps one of

the tamest of the Waders which frequent the Nile. It is generally seen running about on the shores or sandbanks, actively searching for food, or skimming from one sandbank to another, its wings not widely expanded, and showing the black band very clearly. When tripping along the shores it jerks its tail and nods its head, and every now and again utters its clear call-note. During the breeding-season the males are quarrelsome, and may often be seen chasing each other, uttering loud cries, which resemble the syllables *ting-ting-ting-ting* and *tschi-tschi-tschi-tschi*, these notes being uttered rapidly in succession. Dr. Leith Adams remarks (Ibis, 1864, p. 29) that "one series of notes, when the bird is alarmed, resemble the words *chip-chip-hoit*, which it utters on the wing as it wheels past your boat and settles on the bank." The food of this bird consists of worms, larvæ, and insects of various kinds; and it appears most probable that this bird is the Trochilos of Herodotus, of which he says that it keeps in close attendance on the crocodile, and enters its jaws to pick out the leeches, and assists to free it from insect parasites. Some authors believe that the Spur-winged Plover is the bird meant; but Von Heuglin and many of those best able to judge give preference to the present species; and he especially mentions that he found it always in close attendance on the crocodiles, of which reptile it appears to have no fear whatever.

The ancient Egyptians were well acquainted with this bird; and it frequently occurs in the wall-paintings in the pyramids, in the hieroglyphics representing the letter **U**.

According to Von Heuglin the present species nests in our spring in Egypt, and after the rainy season in the Sudan. It does not make any nest, but merely deposits its eggs, two in number, in a depression in a sandbank. Brehm says that when the bird leaves her eggs she covers them with sand; but Von Heuglin remarks that he always found the eggs quite bare, and that, owing to their sandy colour, they are exceedingly difficult to distinguish. I do not possess authentic eggs of this bird; but they are described by Von Heuglin as being "blunt oval in shape, dull, without any gloss, and rather coarse in grain of shell. They measure $13'''$–$13\frac{1}{4}'''$ by $10\frac{1}{2}'''$, and are brownish ochreous in colour, closely and tolerably regularly marked with numerous ashy-grey, yellowish brown, and reddish brown spots and dots."

The specimen figured is the one above described, and is in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀. Egypt. *b*, ♀. Egypt, March 25th, 1870 (*G. E. Shelley*). *c*, ♂, *d*, ♀. Egypt (*Hemprich and Ehrenberg*).

## Genus CHETTUSIA.

*Charadrius* apud Pallas, Reise, i. p. 456 (1771).
*Tringa* apud S. G. Gmelin, Reise durch Russl. ii. p. 194 (1774).
*Chettusia*, Bonaparte, Icon. Faun. Ital. Ucc. Introd. p. 115 (1832).
*Vanellus* apud Temminck, Man. d'Orn. iv. p. 360 (1840).
*Lobivanellus* apud Blyth, Cat. B. Mus. As. Soc. Beng. p. 261 (1849).

This genus is represented in the Palæarctic, Oriental, and Ethiopian Regions, two species being found in the southern portion of the Western Palæarctic Region.

In habits they appear to approach more closely to the Lapwing than to any of the other allied genera; but *Chettusia leucura* frequents marshy localities much more than the other species included in this genus. Their flight resembles that of the Lapwing; and their call-note is a shrill short whistle. They feed on insects of various kinds (grasshoppers, coleoptera), worms, &c.; and some species obtain their food on the shores of lakes and in marshes, frequently wading far into the water, which their long legs enable them to do. Their walk is steady and rather stately; and they run with tolerable ease and swiftness. They are to some extent gregarious, being sometimes seen in flocks and sometimes in pairs. They make no nest, but place their eggs, which resemble those of the Lapwing, on the ground in a mere depression in the soil.

*Chettusia gregaria*, the type of the genus, has the bill about as long as the head, rather slender, straight, about as high as broad at the base, compressed towards the tip; culmen straight to the end of the nasal sinus, which extends over three fourths of the length of the bill, then decurved to the tip, which is strongly hooked; gape-line straight; nostrils subbasal, linear, lateral; wings long, full, pointed, the second quill longest, the first slightly longer than the third; inner secondaries as long as the fifth primary; tail moderate, even; legs long, slender, the tibia bare for nearly half its length; tarsus long, slender, scutellate; toes long, moderately slender; claws slender, slightly curved, rather obtuse, that on the middle toe slightly dilated on the inner edge.



SOCIABLE PLOVER.

CHETTUSIA GREGARIA

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# CHETTUSIA GREGARIA.

(SOCIABLE PLOVER.)

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*Charadrius gregarius*, Pallas, Reise, i. p. 456 (1771).
*Tringa keptuschka*, Lepechin, Tageb. Reisé Russ. Reiches, i. p. 229, footnote *b* (1774).
*Tringa fasciata*, S. G. Gmelin, Reise durch Russl. ii. p. 194, pl. 26 (1774).
*Charadrius keptuschka* (Lep.), Wagler, Syst. Av. *Charadr.* no. 45 (1827).
*Chettusia gregaria* (Pall.), Bp. Iconog. Faun. Ital. Ucc. Introd. & p. 115 (1832).
*Charadrius wagleri*, J. E. Gray & Hardw. Ill. Ind. Zool. pl. 50 (1835).
*Vanellus keptuschka* (Lep.), Temm. Man. d'Orn. iv. p. 360 (1840).
*Vanellus coronatus*, Rüpp. Syst. Uebers. no. 403 (1845, nec Linn.).
*Vanellus gregarius* (Pall.), C. L. Brehm, Vogelfang, p. 285 (1855).
*Vanellus pallidus*, Heugl. Syst. Uebers. Vög. N.O.-Afr. p. 55. no. 566 (1855).
*Charadrius ventralis*, Jerdon, Cat. no. 366, and B. of India, ii. p. 644 (1863, nec Wagl.).

*Pigalitza Keptushka*, Russian.

*Figuræ notabiles.*

Fritsch, Vög. Eur. taf. 33. fig. 11; Gould, B. of Eur. pl. 292; Bonaparte, *l. c.*

♂ *ad. ptil. æst.* vertice coracino-nigro: fronte striâque superciliari ad nucham ductâ albis: loris cum striâ per et infra oculum nigris: collo postico delicatè cinereo: dorso, secundariis intimis cum tectricibus alarum majoribus et medianis et uropygio cinereis brunneo tinctis, his saturatioribus: remigibus primariis cum tectricibus primariorum primi ordinis coracino-nigris, secundariis cum tectricibus alarum majoribus (secundariis intimis exceptis) niveis: supracaudalibus et rectricibus duabus extimis utrinque albis, rectricibus reliquis albis fasciâ magnâ subapicali notatis: mento cum gulâ albis: genis, regione paroticâ juguloque delicatè rufescenti-isabellinis: pectore saturatè cinereo, in parte imâ nigricante, et areâ magnâ abdominali nigerrimâ, postice lætè castaneo-rufâ: hypochondriis (parte superiore exceptâ), axillaribus, subalaribus, crisso et subcaudalibus niveis: rostro pedibusque nigris, iride fuscâ.

♀ *ad.* mari similis sed paullo sordidior, pileo vix brunneo tincto.

*Juv.* vertice sordidè nigro, albido notato: fronte et striâ superciliari flavicanti-cervinis nec albis: corpore suprà grisescenti-brunneo, plumis fere omnibus flavicante cervino marginatis aut apicatis: alis et caudâ ut in adulto picturatis: striâ oculari nullâ, sed loris, mento et gulâ albis: colli lateribus et pectore albidis, nigro-fusco striatis et notatis et vix cervino lavatis: corpore reliquo subtùs albus.

*Adult Male in summer* (Volga, April). Crown, space from the base of the bill to the eye, and a narrow streak behind the eye, jet-black, forehead and a broad streak extending over the eye and meeting the corresponding one from the other side on the nape pure white; hind neck pale ashy grey; back ashy grey, darker than the neck, and with a faint brownish tinge; primaries and the outer primary coverts glossy jet-black; secondaries and larger wing-coverts pure white, except the elongated inner secondaries, scapulars, and the median and lesser wing-coverts, which are dull ashy grey with a brownish tinge;

sides of the rump and upper tail-coverts white, as are also the two outer rectrices on each side, the rest of the tail being white, with a broad subterminal black bar; chin and upper throat white, becoming pale reddish sand-colour, and gradually merging into rich dark ashy grey on the breast and paler grey on the sides of the neck; auriculars sandy-coloured; lower breast gradually shading off into jet-black on the abdomen, which latter terminates posteriorly in rich chestnut-red; lower flanks, under wing-coverts and axillaries, under tail-coverts and thighs white; legs and beak black, iris brown. Total length about 13·5 inches, culmen 1·5, wing 8·1, tail 3·6, tarsus 2·4, bare portion of tibia 1·1.

*Female* (Sarepta, March). Resembles the male, but is duller and paler in general coloration, and the black on the crown is duller and slightly sullied by brown. A female in Mr. Harting's collection, however, is fully as brightly coloured as the male.

*Young of the year* (Punjâb, 8th November). Black on the crown, very dull in colour, and intermixed with dirty white; forehead and the stripe round the crown pale yellowish buff, instead of white; the grey on the upper parts of the adult bird is replaced by greyish brown, with the faintest purple tinge on the scapulars, most of the feathers being narrowly bordered or tipped with yellowish buff; wings and tail as in the adult; lores, chin, and upper throat white; no dark line through the eye; sides of the neck and the breast white, closely marked with blackish brown, and faintly washed with buff; rest of the underparts pure white.

*Obs.* It appears that when the bird has attained its full plumage it retains it throughout the year; for I have before me a female from Mr. Harting's collection, shot in February at Bhawulpore, which is in as full plumage as any adult breeding-specimen I have seen. Mr. A. O. Hume, who describes what he calls the winter plumage (Stray Feathers, i. p. 232), has evidently had a young bird before him. I am indebted to Mr. Harting for three young specimens showing the gradual change from the one above described towards the adult dress. One of these specimens has nearly lost the dark markings on the breast, but is not quite as near the adult bird as the following example in my collection.

*Young Male* (Southern Russia). Very much duller than the adult bird, the black on the crown and through the eye very dull, and that on the abdomen wanting, as is also the chestnut-red on the lower abdomen.

*Nestling.* I do not possess the nestling; but it is figured by Mr. A. Marchand (Rev. et Mag. de Zool. 1870, pl. 10), who depicts it as having the head and upper parts white, on the forehead, crown, and back washed with ochre, and having the crown and upper parts spotted and blotched with blackish, the entire underparts being white.

This, one of our rarer European Plovers, inhabits South-eastern Europe, visiting North Africa in the autumn and winter; and it is met with in Central Asia and India, breeding in the former and wintering in the latter country.

Mr. J. E. Harting tells me that Mr. Taczanowski, when looking over his series of skins of this species, informed him that there is one in the Warsaw Museum which was killed at Lublin, in Poland; but elsewhere in Northern or Central Europe I do not find it recorded as having been met with. It has, however, been said to have occurred in Southern France, though on very doubtful evidence; for Baron J. W. von Müller states (J. f. O. 1856, p. 228) that the specimen of *Chettusia leucura* recorded by Crespon as having been obtained near Maguelone in 1840 belonged to this species, and was not really *C. leucura*; but as Messrs. Degland and Gerbe state that they examined the specimen in question, and refer it to *C. leucura*, I can only infer that

Baron von Müller must have been labouring under a mistake. According to Mr. Howard Saunders it has occurred in Spain; for he writes (Ibis, 1871, p. 386) as follows:—"Of this Plover one half-putrid example hanging up in the market of Cadiz, in February 1868, was the only one I ever saw in Spain." Unfortunately he was unable to preserve this specimen so as to make sure by comparison that his identification was correct; for it has not been shown to have occurred in Western Europe by any other competent ornithologist. And it would have been interesting had one been able to prove that its range really extends so far to the west; for hitherto it has only been with certainty known to occur as far west as Italy, where two specimens have been obtained:—one near Rome, in March 1838, recorded by Bonaparte; and the second, which is now in the Sienna Museum, in April 1856.

It does not appear to have been met with in Greece or Turkey; but Professor von Nordmann states that he found large flocks of this species between Perekop and Simpheropol, and occasionally amongst them examples of *Hoplopterus spinosus*. It appears to be common on the Volga, whence many specimens are from time to time sent, all in full breeding-plumage or in immature dress, as it does not seem to winter there. Sabanäeff met with it in the Ural, where, on the eastern slope, it ranges nearly up to 59½° N. lat., and undoubtedly breeds in the district of Shadrinsk. According to Eversmann the northern limit of its range is about 53° or 50° N. lat.; and Bogdanoff met with it during the autumn between the rivers Ilovat and Medvediza.

I do not find it recorded from Asia Minor or Palestine, though it may very possibly be met with there during passage, as it is recorded by Mr. C. W. Wyatt (Ibis, 1870, p. 17) as having been found by him on the plain of Er Ráhah, in the peninsula of Sinai. It is met with in North-east Africa during the winter season, but is rare. Captain Shelley writes (B. of Egypt, p. 233):—"This species is sparingly scattered throughout Egypt and Nubia. I only fell in with it twice, between Girgeh and Sioot, killing one of a pair which I saw on the 9th of March, and one on the following day, out of a flock of eight, lower down the river;" and Von Heuglin writes (Orn. N.O.-Afr. p. 997) as follows:—"During the autumn and winter it regularly visits the localities we explored; it appears in Egypt early in October, and migrates southwards to the savannas of Kordofan, Takah, and Sennaar, usually in flocks of from five to fifteen individuals, each flock keeping close together; and generally they are extremely shy. I observed it during the month of December in places where the plains had been burnt, and in sandy localities around Rahad and Atbara. It appears seldom to settle on the ground, but is usually seen flying swiftly near the ground over the plains, now and again crossing the caravan-roads: and I succeeded in shooting several from horseback as they crossed the road; for I could not otherwise get within range. Sometimes we heard it utter a shrill, short whistle; but otherwise it uttered no sound."

To the eastward it is met with as far as India and Turkestan, but is not referred to by any of the travellers in Eastern Siberia. Severtzoff (Turk. Jevotnie, p. 69) says that he met with it throughout Turkestan, except in the south-western part of the country. It is there a partial migrant, and he met with it in the plains to an altitude of 3000 feet above the sea-level. Mr. Blanford did not meet with it in Persia; but Mr. A. O. Hume (Stray Feathers, i. p. 231) says that "it was often met with in Sindh, chiefly in waste places in the immediate neighbourhood of cultivation. As a rule this is an upland bird; and you may occasionally see it near jheels, but it is most common in the neighbourhood of cultivation on waste dry uplands. It

keeps together in flocks of from twenty to one hundred, and, until shot at once or twice, is fearless and tame." Mr. Hume does not believe that it breeds in India. Mr. R. M. Adam met with it sparingly during the winter on the plains near the Sambhur Lake. Dr. Jerdon writes (B. of India, ii. p. 645):—in India it "is a somewhat rare bird; and I have only seen it in Western India at Jalna in the Deccan, and at Mhow in Central India. It frequents grassy plains in flocks of from eight to twenty, is rather shy, and has a peculiar cry, which, however, it does not utter frequently. It is a migratory bird, departing early in the year for Central Asia, where, according to Pallas, it breeds. Adams states it to be pretty common during the cold months in fields and wastes near Loodiana." Colonel Irby writes (Ibis, 1861, p. 238) that it is exceedingly common in Oudh and Kumaon "on open sandy plains in January, February, and March. Never seen alone, but in flocks of from six to upwards of fifty. When on the ground, at first sight they appear very like the Golden Plover; but upon taking wing they resemble *Sarciophorus bilobus* or *Lobivanellus cinereus*, showing a great deal of white in the wings, but flying close to the ground, unlike the other Plovers." Mr. Holdsworth met with it in Ceylon, whence it had not previously been recorded, and writes (P. Z. S. 1872, p. 471) that he "identified a single specimen of this Plover, shot by Mr. Bligh on the Galle face at Colombo."

Respecting the habits of the present species I find nothing of interest recorded beyond what is given above. It appears to assimilate tolerably closely to the Lapwing in habits, to go in tolerably large flocks during the seasons of migration and winter, and to be, as a rule, rather shy. It certainly breeds near Sarepta; but I have no information thence respecting its mode of nidification. A single egg sent to me by Mr. Möschler, who informs me that it was obtained by his Sarepta collector with the birds, closely resembles eggs of the common Lapwing (*Vanellus cristatus*), but is, if any thing, rather paler in ground-colour, and a trifle more sparingly marked with spots and blotches. Like the other Plovers this species is insectivorous, and feeds on grasshoppers, spiders, coleoptera, and insect-larvæ.

The specimens figured are an adult bird in full breeding-dress and an immature but nearly adult specimen, both being the birds from which the descriptions are taken; but the youngest bird described, for which I am indebted to Mr. Harting, I received rather too late to figure.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Volga, April. *b*, ♂, *c*, ♀. Sarepta, South Russia, March (*H. F. Möschler*). *d*, *juv.* Southern Russia (*Dode*).

*E Mus. Howard Saunders.*

*a*, ♂ *ad.* Volga (*H. F. Möschler*). *b*, *juv.* Crimea (*Th. Schmidt*).

*E Mus. J. E. Harting.*

*a*, *b*, *c*, *d*, *ad.* Southern Russia (*Möschler*). *e*, ♂. Sarepta. *f*, ♂ *ad.* Punjab, March 1868 (*Hume*). *g*, *h*, *juv.* Punjab, November and December 1867 (*Hume*). *i*, *juv.*, first year. Punjab, November 1869 (*Elwes*). *k*, ♀ *juv.*, second year. Umballah, February 1867 (*Dr. Scott*). *l*, ♂. Bhawulpore, February 1868 (*Marshall*). *m*, ♀. Ferozepore.



CHETTUSIA LEUCURA.

XIII

# CHETTUSIA LEUCURA.

(WHITE-TAILED LAPWING.)

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*Charadrius leucurus*, Licht. in Eversm. Reise nach Buck. p. 137 (1823).
*Lobivanellus leucurus*, Blyth, Cat. B. Mus. As. Soc. Beng. p. 261 (1849).
*Chettusia leucura*, Bonap. Comptes Rendus, xliii. p. 419 (1856).
*Vanellus leucurus*, Hartl. Orn. W. Afr. p. 211 (1857).
*Vanellus villotæi*, Audouin, Descr. de l'Egypte, fol. p. 297 (1825).
*Vanellus grallarius*, Less. Traité d'Orn. p. 542 (1831).

*Chizi*, Kabul (*A. Leith Adams*); *Chiric*, Affghanistan (*Jerdon*).

*C.* supra brunnea, dorso lilascente: tectricibus alarum superioribus plerumque brunneis, minimis externis albis, majoribus albis, basi nigris, brunnescente lavatis: secundariis interioribus brunneis, dorso concoloribus: tectricibus supracaudalibus caudaque pure albis: gula alba: gutture imo brunneo: pectore griseo, albo lavato: abdomine et subcaudalibus pallide ferrugineis: subalaribus, hypochondriis et plumis axillaribus pure albis: rostro nigro: pedibus flavis.

Crown of the head and back of the neck greyish brown; back, scapulars, and the greater part of the wing-coverts brown with slight lilac reflexions; lower part of the back greyish brown; upper tail-coverts and tail pure white; small feathers along the carpal joint and on the outside of the wing white, some of the outer wing-coverts black at the base, showing rather conspicuously; quills black, secondaries for the most part pure white, the outermost short secondary quills black towards the tip, the next pure white, some of them greyish brown near the base of the outer web; the innermost long quills coloured like the back, brown with faint lilac reflexions; forehead and sides of the face rather paler brown than the crown; upper part of the throat white; lower part of the throat brown, like the sides of the neck; chest grey with white edgings to the feathers, giving a somewhat mottled appearance; abdomen and under tail-coverts salmon-colour; under wing-coverts, flanks, and axillary plumes pure white; bill black; legs yellow; iris brown; margins of the eyelids red. Total length 9·5 inches, culmen 1·25, wing 6·7, tail 2·75, tarsus 2·55.

Great difficulty has been experienced by us in determining the correct name to be borne by this species; and in our researches we have received great help from Lord Walden and Professor Newton. By some authors the present bird has been called *Vanellus flavipes* of Savigny; but after a careful examination we cannot discover the work in which this name was published, and we therefore omit it from the list of synonyms, believing it to be only a MS. name.

The White-tailed Plover is found most plentifully in Egypt, whence it ranges eastward as far as Turkestan and Kabul, extending even into India proper. It is also found in North-eastern Africa generally; and, according to Professor Schlegel, the Leyden Museum has a specimen marked by his predecessor, Professor Temminck, as coming from Senegal, on which authority it is included by Dr. Hartlaub among the birds of Western Africa. Loche also includes it among the birds of Algeria as an accidental visitant. It is a straggler into Southern Europe, having

been recorded by Mr. C. A. Wright from Malta, and by Messrs. Jaubert and Barthélemy Lapommeraye from the South of France.

According to the last-named authors one specimen was captured out of a flock of Lapwings by a M. Lebrun, of Montpellier, and is now in the collection of M. Doumet, at Cette. Twice has it occurred in Malta, as observed by Mr. Wright, a gentleman who must be ranked among the most indefatigable of recent contributors to European ornithology. From his exhaustive account of this species published in 'The Ibis' for 1865 (p. 459), we extract the following observations relative to the capture of the White-tailed Lapwing in Malta:—

"On the 18th of October, 1864, in one of my frequent visits to the game-stalls in the Malta market, my attention was struck by a strange-looking bird, which was offered to me for sale as a Cream-coloured Courser—a somewhat rare visitor, but of which I had picked up, in the course of several years, from the same stall, one or two specimens, and a few others from other sources. This it certainly was not. On consulting such books as I had at hand, I could find nothing answering to it in Bree's 'Birds of Europe' or Degland's 'Ornithologie Européenne;' and being sure it did not belong to any species hitherto observed in England, I was altogether at a loss to know what it was. The short description, in 'The Ibis,' for 1859 (pp. 52, 53), of *Vanellus leucurus*, given by Mr. E. C. Taylor, in his 'Ornithological Reminiscences of Egypt,' to which I subsequently referred, was sufficient to satisfy me that I was in possession of one of these birds, so rare in European collections that Mr. Taylor observes there is but one, unnamed, footless specimen in the British Museum, and in the Paris Museum at the Jardin des Plantes he could not find it at all. It was, he adds, perhaps the rarest species which he and his party met with in Egypt, though on an extensive tract of marshy country, a few miles south-west of Thebes, it was abundant and several were shot. In confirmation of this, I am informed that a gentleman who returned to Egypt this winter met with a good many near Thebes during his visit last year. . . . .

"I could not learn any particulars whether this wanderer was in company with others when shot. All that I could ascertain was that it was obtained two days previously (16th Oct.), near Casal Zabbar, on the east coast of the island. For some time prior to this, strong southerly and easterly winds were prevalent. It had probably found its way from Egypt to Malta by way of Benghazi or Tripoli, although, at this season, the contrary course might be expected, birds in general migrating, in the autumn and winter, from a northerly to a southerly region. But I am more inclined to think that it was accidentally blown off the coast of North Africa, and was thus forced to make an unwilling journey in unknown parts, rather than that it was returning, in a course of regular migration from a visit to Europe, to its former haunts.

"I have since received a female specimen of *Chætusia leucura* from Mr. Stafford Allen, at Alexandria, who writes to me as follows:—'Although I have generally looked upon this as a very rare bird, having only once *seen* it alive (and was then unable to shoot it), it seems to be not very uncommon somewhere near Alexandria, since I have seen, I should think, not less than twenty specimens here during the last two months (Nov. and Dec.), sometimes as many as three or four in one morning. I have preserved four or five; but as they mostly have their throats cut, according to the Mahommedan custom, it is troublesome work.' In a postscript of January 3rd, he adds:—'This morning I saw four *Chætusia leucura* in the market; but none were very

good specimens. Perhaps they are unusually abundant this year, which may account for your visitor.'"

More recently Mr. Wright has recorded another specimen of the present species from Malta Ibis, 1870, p. 491):—

"A second example of this very scarce European visitor was shot on some marshy ground at the head of the grand harbour, on the 24th of October, 1869. It had no companions; and it was by mere chance that its occurrence became known. The taxidermist I usually employ happened to be a relation of the man who shot it; and having seen the specimen obtained by me in 1864, and the figure of it in 'The Ibis' (1865, pl. x.), he immediately recognized its value, and saved it from being cooked. When shown to me it had already been set up, but the skin was quite fresh. Like the former specimen it was a female; the tail was entirely white, without the terminal brown bar which is sometimes present in this species. The bird-stuffer assured me that the irides were *brown*, which agrees with the experience of Dr. Adams, who shot this bird in the Punjaub; the margins of the eyelids were *red*. There was nothing extraordinary in the weather to account for its appearance."

In North-eastern Africa the White-tailed Lapwing more frequently occurs, the following observations having been recorded by naturalists who have procured it there.

Captain Shelley has written to us as follows:—

"*Chettusia leucura* is essentially a marsh-Plover, rarely absent from any boggy ground, but not met with near running water or where there is a firm bottom of sand or mud. They have a short, hoarse cry, and no variety of note. I think that the crimson reflection on the back fades slightly, as it appears very bright in the sunshine when the bird is just killed. It is generally met with in pairs, rarely more than four together, and never with flocks of other Plovers."

We are indebted to Mr. Edward Cavendish Taylor for the following interesting account of the habits of the present species:—

"I have observed *Chettusia leucura* in Egypt from December to the middle of April. It is generally to be seen in small flocks, and is only found in wet, swampy places. It seems to be essentially a marsh-frequenting Plover; there is an extensive marsh near Thebes, in Upper Egypt, which it especially affects. I have also seen it in the Alexandria bird-market in the months of February and April, and have been told on good authority that it is not uncommon throughout the Delta wherever there are to be found marshes suited to its habits. There is no difference whatever between the sexes during the time of year that I have had the opportunity of observing it. I do not know if it remains in Egypt to breed or not, so cannot tell you any thing about its nidification. In living or newly killed specimens the legs and feet are of the brightest yellow; and the eyes are very large."

Mr. George Cavendish Taylor, who accompanied his brother on his first expedition to Egypt, also sends us a note on this bird:—

"The specimen of the White-tailed Plover which was brought to England by my brother, and mentioned by him first in the 'Zoologist' for 1854, and subsequently in 'The Ibis' for 1859, was shot by me on the 16th January, 1854, about four miles west of Thebes, in the direction of Erment, where there is an extensive marshy tract bordering on the desert and intersected by natural drains, deep and muddy: it was then, and probably is still, a favourite haunt for

Waders and Ducks, and especially for Geese, Pin-tails, Teal, Curlew, Snipe, Jack-Snipe, and Sand-Grouse of two kinds (*P. exustus* and *P. guttatus*), which, when disturbed, would fly off and settle on the adjoining desert. Owing to the above-mentioned drains, the marsh was most difficult to traverse, as one's forward movement was stopped at every forty or fifty yards. Altogether I obtained several specimens of this Plover, of which there were two or three flocks in the marsh, each consisting of perhaps a dozen individuals. They were not difficult of access; and their white tails rendered them most conspicuous directly they opened their wings to fly. This was the only locality where I observed them during our two months' stay on the Nile. On the same occasion I shot a Hare, which scrambled into an old tomb on the edge of the desert. I tried to induce an Arab who followed me to go in after it; but he refused, saying that there were snakes inside."

The following account has been published by Dr. A. E. Brehm (J. f. O. 1866, p. 386):—

"In Northern Egypt this Plover is by no means rare; but in suitable localities appears regularly, and certainly breeds there. From Egypt it extends over all North-east Africa: at least it is found in the southern parts of the Nile; for I observed it in all the countries I visited, though only in localities suitable to its mode of life. . . . .

"The White-tailed Plover is a marsh-bird in the fullest sense of the word, and invariably frequents the middle of the marshes and not the borders. Lakes which have bare shores it does not like, but affects ponds in which grass and reeds grow luxuriantly, but which have some places where the water is clear of them. They are to be found on the Mareotis Lake, near Alexandria, but only stragglers, as this locality is unsuitable. It is much more frequently to be observed on the Mensaleh, Brurlos, and Mœris Lakes, which have marshes on three sides, and is a common bird in the rainwater ponds of the Eastern Sudan. They are generally to be seen in pairs, and more seldom in small companies of from four to ten individuals; larger flocks I do not think I have ever seen. Probably such companies are only occasionally formed by several pairs consorting together; for in these flights they keep together in pairs. In watching a single pair one cannot but notice that they keep close together, and what the one does the other also copies; thus they rise on the wing together, settle in the same place, seek food at the same time—in fact, do every thing together.

"Under all circumstances the pair avoid the edge of the lake, and frequent muddy places covered with shallow water, running busily about like Sandpipers, seeking after food. They run well, as would be expected from their long legs, but not so quickly and straight as the Golden Plover and Lapwing, but more steadily, and with a more stately step. Their flight is light and easy, more resembling that of the Golden Plover than the Lapwing, whose evolutions on the wing this bird, so far as I recollect, never copies. On the other hand, its note much resembles that of the Lapwing; I cannot, however, now state wherein the difference lies, as my memoranda on the subject are too short.

"The White-tailed Plover does not seem to care about the company of other birds, and lives but very seldom in company with the Spur-winged Plover, which also frequents the larger marshes in search of food. Although this bird is very watchful, still it never acts as warner or watcher for other birds, but rather takes advantage of the watchfulness of the Lapwings or Godwits, acting on their warning note. It is always shy of human beings, and shiest where it

more seldom meets with them. At the Mensaleh Lake I have several times killed both male and female of a pair right and left, but tried in vain to approach them in the Sudan. At the rain-water ponds, of which I have several times spoken in this Magazine, most of the birds there assembled will not let the sportsman approach them, and, with few exceptions, the difficulty in hunting after them was indescribable. The White-tailed Plover is as exceptionally shy as *Mycteria senegalensis* and *Ardea goliath*, which are amongst the shiest of the Central-African birds. I am sorry to say that I did not note any particulars respecting the food of this bird; nor could I obtain any information as to its nidification. The eye is reddish brown, bill blackish brown, the feet beautiful light yellow."

The present species has likewise been obtained in the Sinaitic peninsula by Mr. J. Keast Lord, who accompanied the expedition lately fitted out by His Highness the Viceroy of Egypt; and, according to a note kindly sent us by our friend Herr von Pelzeln, we learn that there is a specimen in the Vienna Museum, from Syria.

In Central Asia it is also found, having been originally discovered by Eversmann between Kuwan and Ian Darja, on the 11th of April. This locality is apparently near the Sea of Aral.

With regard to its occurrence in Kabul, we extract verbatim the following account from Mr. Wright's paper in 'The Ibis,' supplied to him by Dr. A. Leith Adams:—

"'Brown Plover,' Salt Range, Punjaub. It is seen generally by the sides of pools and lakes in small flocks. . . . . A rare Indian bird—Kabul its habitat; so it may be only migratory in the Punjaub. Sex not recorded. Native name *Chizi*. The reason it was not included in either of my Indian lists arose from the skins not having been identified until after the papers were published."

Dr. Jerdon (Birds of India, iii. p. 646) writes:—

"The White-tailed Lapwing is a rare bird in India. I procured it myself only once, on the margin of the large lake at Bhopal, in Central India, in December, where it occurred in small flocks; my attention was first called to it by its peculiar cry. Blyth procured one specimen from the Calcutta bazar; it was once obtained in the Dehra Doon; and no other record of its occurrence in India is noted. It is, however, stated not to be rare in Afghanistan, where it is called *Chiric*."

Our figure is taken from a nicely preserved skin obtained in Egypt by the late Mr. S. Stafford Allen. It will be noticed that this specimen has a brown bar on the tail; but this disappears, as a skin in Lord Lilford's collection, from which the description was taken, has the tail perfectly white.

In the preparation of the above article we have examined the following specimens :—

*E Mus. Sharpe and Dresser.*

*a*, *b*. ♂, ♀. Alexandria, December 15, 1864 (*S. Stafford Allen*).

*E Mus. Lord Lilford.*

*a*. ♀. Alexandria, December 14, 1864 (*S. Stafford Allen*). *b*. Egypt (*E. Cavendish Taylor*).

*E Mus. J. E. Harting.*

*a*. ♀. Alexandria, December 14, 1864 (*S. Stafford Allen*). *b*. ♂. Erment, near Thebes, January 1864 (*E. Cavendish Taylor*). *c*. ♂. Egypt, February 21st, 1870 (*G. E. Shelley*). *d*. ♀. Peninsula of Sinai (*J. Keast Lord*).

## Genus HOPLOPTERUS.

*Pluvialis* apud Brisson, Orn. v. p. 84 (1760).
*Charadrius* apud Linnæus, Syst. Nat. i. p. 256 (1766).
*Hoplopterus*, Bonaparte, Sagg. Distrib. Metod. An. Verteb. p. 56 (1831).
*Vanellus* apud Swainson, B. of W. Afr. ii. p. 237 (1837).
*Philomachus* apud G. R. Gray, List of Gen. of B. p. 65 (1840).

This small genus is represented only in the Palæarctic, Oriental, and Ethiopian Regions, one species being found in the south-eastern portion of the Western Palæarctic Region.

They are said to resemble the Lapwing very closely in their habits, but frequent marshy and damp localities, especially the banks of streams and large rivers. They are active, but peculiar and droll in their movements, being noisy and curious, usually meeting a stranger and hovering over his head uttering their loud warning cry. Their flight is swift and vigorous, but jerky and wavering. They feed on insects and mollusks, chiefly aquatic, as they obtain their food on the banks of streams and on marshes. They wander about in pairs and small flocks, and are said to be very pugnacious, frequently fighting with great ferocity, using the spurs with which their wings are furnished as weapons of offence. Their nest is a mere depression in the ground; and their eggs, three or four in number, are spotted and blotched with olive-brown and sooty blackish-brown on a greyish olivaceous, or on a warm clay-ochreous ground.

*Hoplopterus spinosus*, the type of the genus, has the bill about as long as the head, straight, moderately stout, the culmen straight to the end of the nasal sinus, then slightly raised, and decurved to the tip, which is narrow, rounded, and sharp-edged; gape-line straight; nasal sinus extending over two thirds of the length of the bill; nostrils long, linear, lateral, subbasal; feathers on the hind crown elongated, forming a crest; wings long, full, the third quill longest, the first and fourth about equal, the second scarcely shorter, the inner secondaries comparatively short; wings armed at the carpus with a strong sharp spur; tail rather long, even; legs long, slender, the tibia bare for half its length, tarsus scutellate; toes moderately long, the hind toe wanting; claws slender, slightly curved, rather obtuse, that on the middle toe dilated on the inner edge.



J.G.Keulemans lith.

Hanhart imp.

SPURWINGED PLOVER.
HOPLOPTERUS SPINOSUS.

# HOPLOPTERUS SPINOSUS.

(SPUR-WINGED PLOVER.)

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*The Black-breasted Indian Plover*, Edw. Nat. Hist. Birds, i. p. 47, pl. 47 (1743).
*Pluvialis persica cristata*, Brisson, Orn. v. p. 84 (1760).
*Pluvialis senegalensis armata*, Briss. Orn. v. p. 86 (1760).
*Charadrius spinosus*, Linn. Syst. Nat. i. p. 256 (1766).
*Le Pluvier armé du Sénégal*, D'Aubent. Pl. Enl. no. 801 (1770).
*Le Pluvier huppé*, Buff. Hist. Nat. Ois. viii. p. 98 (1781).
*Le Pluvier à aigrette*, Buff. tom. cit. p. 99 (1781).
*Charadrius persicus*, Bonnat. Tabl. Encycl. i. p. 21 (1790).
*Charadrius senegalensis*, Steph. in Shaw's Gen. Zool. xi. p. 482 (1819).
*Charadrius cristatus*, Steph. tom. cit. p. 483 (1819).
*Hoplopterus*, Bp. (*Charadrius spinosus*, L.), Saggio di una Distrib. Metod. Anim. Verteb. p. 56 (1831).
*Vanellus melasomus*, Swains. B. of West Afr. ii. p. 237, pl. 26 (1837).
*Hoplopterus spinosus* (L.), Bp. Comp. List, p. 46 (1838).
*Philomachus*, G. R. Gray (*Charadrius spinosus*, L.), List of Gen. of B. p. 65 (1840).
*Hoplopterus persicus* (Bonnat.), G. R. Gray, Gen. of B. iii. p. 542 (1847).
*Hoplopterus armatus*, C. L. Brehm, Vogelfang, p. 284 (1855, nec Jard. & Selby),

*Figuræ notabiles.*

Edwards, *l. c.*; D'Aubenton, *l. c.*; Swainson, *l. c.*; Gould, B. of Eur. pl. 293.

*Ad.* capite suprà et nuchâ, striâ medianâ a mento usque ad pectus ductâ, pectore epigastrioque nitidè nigris: capitis et colli lateribus et collo postico, subalaribus, crisso, supra- et subcaudalibus albis: dorso, scapularibus et secundariis intimis cervino-umbrinis: remigibus primariis nitidè nigris: tectricibus alarum extùs albis et intùs pallidè cervino-umbrinis: caudâ ad basin albâ, et in dimidio apicali nitidè nigrâ: rostro et pedibus nigris: iride scarlatino-rubrâ.

*Adult Male* (Egypt, 19th December). Crown, nape, chin, and the centre of the throat down to the breast, breast and underparts down to the lower abdomen deep glossy black; sides of the head and of the neck and throat and hind neck pure white; back, scapulars, and inner secondaries pale buffy brown; sides of the rump, upper tail-coverts, and basal portion of the tail white; rest of the tail black very narrowly tipped with white; quills, all but the inner secondaries, deep black; wing-coverts on the outer part of the wing pure white and towards the body gradually becoming buffy brown; a sharp spur on the shoulder; under wing-coverts and axillaries, crissum, and under tail-coverts pure white; bill and feet black; iris rich lake-red. Total length about 10·5 inches, culmen 1·2, wing 8·15, tail 4·2, tarsus 2·85.

*Young.* Closely resembles the adult bird; and there is no difference either in the plumage of the sexes.

*Young in down* (*fide* Von Heugl. Orn. N.O.-Afr. p. 1006). Crown and upper parts rufescent isabelline

spotted and striped with velvety black; a broad black band passes from the eye to the nape; and below this on the hind neck there is a white crescentic mark; tail blackish; bill blackish grey with a horn-blue point; feet greenish plumbeous.

This, the only representative of the genus *Hoplopterus* which has been obtained within the limits of the Western Palæarctic Region, is of somewhat rare occurrence in Europe proper, and is only found in the countries skirting the Mediterranean, in West Africa, and eastward as far as Persia.

It has not been recorded from Central or Western Europe; and though Temminck asserted that it has been met with in Sicily, it appears doubtful if such is really the case, as neither Salvadori nor Doderlein are aware of any instance of its occurrence. But though improbable, yet it is by no means impossible for it to have straggled thus far; for Mr. C. A. Wright records (Ibis, 1869, p. 246) its occurrence in Malta as follows:—"On the morning of the 12th of October, 1865, I found my birdstuffer waiting for me with news that he had just received a wounded bird of a kind he had not seen before, which he wished me to identify. He said he thought it might turn out to be a young Lapwing. We soon reached his dwelling; and I was delighted to find at a glance that he was mistaken, and that the bird was certainly no other than *Hoplopterus spinosus*. I told him to look at the carpal joints; and on doing so he was much surprised to find the strong sharp spur with which this species is there armed. He informed me that the bird was given to him by a sportsman who, while Quail-shooting the day before, had flushed it and another together from a cotton-field. Its companion escaped. Of course, I lost no time in securing the prize for my local collection; and with *Chettusia leucura* and *Charadrius longipes* it forms an interesting trio. On dissection it proved to be a female, with ovary (as might be expected at that season) very small." I do not find that it has been obtained elsewhere in Europe proper, except in Greece, Turkey, and South Russia. Dr. Krüper states that in Greece and in Asia Minor it is occasionally met with, and adds that there are specimens in the Museum at Athens which were killed in Attica on the 10th March 1860, and 6th May 1862. Mr. Danford informs me that he saw many in December at Tatar-Bazardjik on the Maritza; and Professor von Nordmann says that he obtained a Spur-winged Plover near Odessa in May 1837, and that he subsequently ascertained that this species visited South Russia and the neighbourhood of the Black Sea annually. The specimen in question was one of eight or ten of this species which were in company with a large flock of *Vanellus gregarius*.

As above stated, the Spur-winged Plover is found, though rarely, in Asia Minor; and it also occurs in Palestine, where, Canon Tristram writes (Ibis, 1868, p. 323), "it returns as most of its congeners are leaving, and spares no pains, by voice and action, to make its arrival known. We found it everywhere in pairs, by streams or in marshy lands, where it was evidently breeding, though we never lighted on a nest." In North-east Africa the present species is very common; but it does not range far south in Africa. Von Heuglin writes (Orn. N.O.-Afr. p. 1005):—"In Egypt there is scarcely a lagoon, a canal, a pond, or a tract of ground overflowed with water, or an island in the river, where this species does not occur; and it also visits the fallow-fields and pastures on the very outskirts of cultivated land. It is almost as numerous in Nubia, on the Atbara, on the lower White and Blue Nile, and in the swamps of East Kordofan. In Abyssinia and along the coasts of the Red Sea we only met with it along the rainwater streams and rivers

in the hot lowlands; and I myself saw a pair on the Djur. In every part of the country we visited it is probably sedentary; and in Egypt the breeding-season is in our spring." In Abyssinia Mr. Blanford only saw it on the highlands on the banks of Lake Ashangi; but it also occurred at Ailat and on the edges of a small stream at Amba, near Massowa.

I do not find any record of the occurrence of the Spur-winged Plover in Algeria or Morocco; but Swainson figures it (*l. c.*), and says that he has examined specimens from Senegambia.

To the eastward the present species has been noticed as far as Persia; but it has only been recorded from that country by the older authors, and Mr. Blanford states that neither he nor Major St. John ever met with it when collecting there.

In habits the Spur-winged Plover is said to have much in common with the Lapwing; and Von Heuglin remarks that it is quite as active and noisy as that bird, and adds that it is very peculiar and droll in its movements.

Mr. S. Stafford Allen gives (Ibis, 1863, p. 156) some interesting notes respecting the habits of this species as follows:—"Curious and interesting as it may be in its habits to an unconcerned spectator, it is any thing but a favourite with the sportsman; for to its vigilance and noisy activity he probably owes the loss of many a good bird that might otherwise have been added to his bag. Woe to the unlucky ornithologist who, in attempting to get within shot of some scarce and shy bird, happens to come across one of these mischief-makers! for, as if equally aware of his intentions and its own worthlessness, it hovers over his head, jerking out its warning cry of 'Zac! zac! zac!' until every bird is effectually scared away from the vicinity. Constantly, whilst thus employed, does it pay the penalty of its interference, by receiving the charge intended for its betters, from which it would otherwise have been perfectly safe.

"Abundantly distributed over the country, and not at all shy, the 'Zic-zac' (as the Arabs call it) is seen in pairs or small flocks, both by the river-side and in the fields, its strongly contrasted black-and-white neck, with the more sober dun of its back, attracting the attention of the most careless observer as it stands with a knowing air on the top of a ridge or hillock, ready to give notice of any thing suspicious.

"The sharp spurs which are placed on the carpal joint of each wing are not worn merely for ornament; for these Plovers are most pugnacious birds, and know how to use these weapons with effect in their frequent battles among themselves, or with their 'pet aversion' the Hooded Crow (*Corvus cornix*). This spur is mostly used whilst on the wing, by darting at the object of their dislike and making a sudden turn upwards on reaching it, striking at the same time. I am inclined to think, however, that it is occasionally used on the ground, as I have several times seen a Zic-zac put down its head and run at another in a threatening manner, though I never saw a blow actually struck. The spurs are often quite worn down, perhaps through the frequency of these encounters, which are said by the natives to be occasionally attended with fatal consequences.

"A curious habit of the Zic-zac (though not confined to this species, as I have noticed it in several other Waders) is that of suddenly jerking up its body whilst on the ground, sometimes emitting its cry of 'Zac!' at the same time—in fact, looking exactly as if afflicted with a violent hiccup.

"The flight of the Spur-winged Plover is strong and vigorous, and partakes of the same jerky and energetic character which distinguishes this species in all its movements.

"This bird feeds principally upon small aquatic insects and mollusks; and, as is usual in birds whose food is of this character (and, indeed, in many others), the stomach always contains in addition a number of stones to assist digestion."

Von Heuglin relates a curious Mohammedan legend respecting this bird. Once on a time, they say, Allah held a great *asumah* (jollification), to which all creatures were invited, and all the animals came except the Spur-winged Plover, which amused itself elsewhere. At last, after a lapse of three days, it put in an appearance, and excused itself by saying that it had been tired out, and fell asleep. But the Creator of all things could look into its false heart, and cursed it for its want of truth, saying to it, "Thou hast not responded to my call, and hast overslept thyself; therefore from this time thou shalt have neither sleep nor rest;" and straightway two long sharp spikes grew on the shoulders of the bird, which give him continual pain, and prevent him from putting his head under his wing to sleep.

Dr. Leith Adams believes this species to be the "Trochilos" of Herodotus: but there appears to be no means of arriving at any clear decision as regards the species to which Herodotus refers; and it is usually supposed to be the Black-headed Plover, and not the present bird. Dr. Adams, referring to this question, says (Ibis, 1864, p. 29):—"There appears to me better reason for considering this species the Trochilos of Herodotus than the Black-headed Plover, inasmuch as the well-known narrative of the Greek historian, strange to say, is still current among the Egyptians, and with reference to this bird, which they state, in its capacity of leech-catcher to the crocodile, is sometimes shut up within the jaws of the animal when the latter falls asleep on a sandbank. On such occasions the Zic-zac (from its call) applies his spurs to the interior of the crocodile's mouth, by way of refreshing the memory of the latter that his faithful henchman is within, when the monster's jaws reopen immediately, as if his reptilian majesty was sorry for his obliviousness. This addition to the old story was given me on good authority, as being very generally believed among the Nile boatmen."

The Spur-winged Plover breeds commonly in Egypt, the nesting-season being in March or April. Von Heuglin says that "the nest consists of a mere depression in the sand islands, dunes, or fallows, and the eggs, three or four in number, resemble those of the common Lapwing, are 15–16 lines long and 10–12 broad, and are pear-shaped. They are spotted and blotched, on a greyish olive ground, with olive-brown and sooty blackish, these markings being more thickly spread at the larger end." I possess a series of eggs collected in Egypt by Mr. Cochrane and by Mr. Stafford Allen, which agree with Von Heuglin's description; but one or two have the ground-colour darker and warmer, it being of a warm dark clay-colour. In size they vary from $1\frac{24}{40}$ by $1\frac{7}{40}$ inch to $1\frac{30}{40}$ by $1\frac{11}{40}$ inch.

The specimen figured is an adult male in full plumage from Egypt.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Boulæ, Egypt, March 15th, 1858 (*H. B. Tristram*). *b*, ♂. Alexandria, Egypt, March 30th, 1864 (*S. S. Allen*). *c*. Egypt, December 19th, 1868 (*E. C. Taylor*).

*E Mus. G. E. Shelley.*

*a*, *b*. Egypt (*G. E. S.*).

## Genus VANELLUS.

*Vanellus*, Brisson, Orn. v. p. 94 (1760).
*Tringa* apud Linnæus, Syst. Nat. i. p. 248 (1766).
*Charadrius* apud Pallas, Zoogr. Rosso-As. ii. p. 132 (1811).

So far as I can ascertain, only four species should be referred to this genus, viz. *Vanellus vulgaris*, which inhabits the Palæarctic Region, ranging into the northern portions of the Ethiopian Region, and *Vanellus cayennensis*, *V. occidentalis*, and *V. resplendens*, which inhabit the Neotropical Region.

In habits the Lapwings are shy and cautious, and are extremely difficult to approach within gunshot range. They frequent wet, marshy localities, or else grass-lands, cultivated fields, and uplands; and except during the nesting-season, they are generally seen in larger or smaller flocks, and even during the breeding-season they are sociable, as one usually finds several pairs nesting in close proximity. Their flight is powerful and light; and they have a peculiar habit of throwing themselves about in the air during the pairing-season. Their note is wailing and mournful, and is frequently heard quite late in the evening. They feed on worms, small land-shells, and insects of various kinds, never, so far as I can ascertain, eating any vegetable matter. They nest on the ground, making a mere depression in it, worked into a cup-shape, without any lining; and the eggs, four in number, are brownish olive, blotched and spotted with blackish brown and pale purplish brown.

*Vanellus vulgaris*, the type of the genus, has the bill considerably shorter than the head, straight, moderately slender; upper mandible straight to the end of the nasal sinus, then slightly raised, and decurved to the tip, which is narrow, rounded, blunt; nostrils linear, rather long, pervious, placed in the basal portion of the nasal sinus, which extends over about two thirds of the length of the bill; head furnished with a long recurved occipital crest; wings long, full, rather rounded, the first quill about equal to the sixth, the second, third, and fourth nearly equal, the third being longest; the carpal joint furnished with a very small, scarcely visible, hard knob; tail moderately long, broad, even; legs rather long, slender; tibia bare for some distance; tarsus laterally reticulated, anteriorly scutellate; hind toes small and feeble, anterior toes moderately long and slender; claws short, curved, slender, obtuse, that on the middle toe with the inner edge dilated.



LAPWING
VANELLUS CRISTATUS
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# VANELLUS VULGARIS.

(LAPWING.)

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*Vanellus*, Brisson, Orn. v. p. 94, pl. viii. fig. 1 (1760).
*Tringa vanellus*, Linn. Syst. Nat. i. p. 248 (1766).
*Vanellus vulgaris*, Bechst. Orn. Taschenb. ii. p. 313 (1803).
*Vanellus cristatus*, Wolf et Meyer, Hist. Nat. Ois. de l'Allem. p. 110 (part x.) (1805).
*Charadrius vanellus* (L.), Pallas, Zoogr. Rosso-As. ii. p. 132 (1811).
*Vanellus gavia*, Leach, Syst. Cat. Mamm. & Birds Brit. Mus. p. 29 (1816).
*Charadrius gavia* (Leach), Licht. Verz. Doubl. p. 70 (1823).
*Vanellus bicornis*, C. L. Brehm, Vög. Deutschl. p. 557 (1831).
*Charadrius vanellus candidus*, J. F. Naumann, Vög. Deutschl. vii. p. 276 (1834).
*Charadrius vanellus pallidus*, J. F. Naumann, ut suprà (1834).
*Charadrius vanellus varius*, J. F. Naumann, ut suprà (1834).
*Vanellus cristatus communis*, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 11 (1866).
*Vanellus cristatus bicornis*, A. E. Brehm, ut suprà (1866).
*Vanellus cristatus crispus*, A. E. Brehm, ut suprà (1866).
*Vanellus ægyptius*, Hempr. & Ehr. (ubi?), fide Von Heugl. Orn. N.O.-Afr. p. 993 (1873).

*Curochdag*, Gaelic; *Vanneau huppé*, French; *Abibe*, *Abecuinha*, Portuguese; *Ave fria*, Spanish; *Paoncella comune*, Italian; *Veneua*, Maltese; *Kiebitz*, German; *Kievit*, Dutch; *Vibe*, Danish; *Vujpa*, Færoese; *Vibe*, Norwegian; *Tofsvipa*, *Vipa*, Swedish; *Hyyppä*, Finnish; *Wshiviza*, *Chibess-Pigalitza*, Russian; *Zerkaoot*, Bashkir.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 242; Werner, Atlas, *Coureurs*, pl. 17; Kjærb. Orn. Dan. taf. xxxi.; Fritsch, Vög. Eur. taf. 38. figs. 3, 4, 5; Naumann, Vög. Deutschl. taf. 179. figs. 1, 2; Sundevall, Svensk. Fogl. pl. xxxvi. fig. 1; Gould, B. of Eur. pl. 291; id. B. of G. Brit. iv. pl. 33; Schlegel, Vog. Nederl. pl. 216; Roux, Orn. Prov. pl. 278.

♂ *ad. ptil. æst.* pileo toto, mento, collo antico et pectore antico nigerrimis: occipitis plumis valdè elongatis cristam subpendulam formantibus: collo postico fuscescenti-albo: dorso, scapularibus et secundariis intimis æneo-virescentibus, illis ex parte violaceo-purpurinis: remigibus nigricantibus, tribus primis albido apicatis: tectricibus alarum violaceo-purpurinis: supracaudalibus rufescentibus: caudâ albâ nigro terminatâ, rectrice extimâ utrinque totâ albâ: colli lateribus albis: superciliis et regione ophthalmicâ albis parum nigricante nebulosis: corpore subtùs inferiùs a pectore usque ad crissum candido: crisso et subcaudalibus rufis: rostro nigricante: iride saturatè fuscâ: pedibus fusco-rubris.

♀ *ad.* mari similis sed sordidior, gulâ vix albo notatâ, pectore antico minus saturatè nigro, tectricibus alarum superioribus æneo-viridibus vix purpureo tinctis nec purpurinis.

*Juv. hornot.* adulto similis sed cristâ breviore, regione infra oculos nigricante, capitis lateribus cervino lavatis,

gulâ et collo antico albis aut albo et fusco-cinereo variis, plumis corporis superioris et pectoris nigri flavicante ochraceo marginatis.

*Ptil. hiem.* ptil. æst. similis sed gulâ albâ, pectoris plumis vix albo apicatis, corpore suprà vix sordidiore plumis nonnullis vix cervino apicatis.

*Adult Male in spring plumage* (Leadenhall Market, May). Forehead, crown, throat in front, and breast deep velvety black, with a purplish tinge; feathers on the hind crown very much elongated and slightly curved upwards; nape and sides of the neck and face white, above and behind the eye marked with black, the lores and the part of the head at the base of the beak all round black; back, scapulars, elongated inner secondaries, and rump rich metallic green, varied with purple; quills black, with a faint purplish tinge, the first three primaries tipped with dirty white; wing-coverts rich glossy violet-purple; upper tail-coverts rufous, nearly fox-red; tail white on the basal and black on the terminal half, the outer rectrix on each side nearly white, and the terminal black band diminishing towards the outside of the tail; breast below the black band and rest of the underparts white; under tail-coverts rusty red; bill blackish; iris blackish brown; legs deep dull lake-red, with a brownish tinge. Total length about 13 inches, culmen 1·15, wing 8·8, tail 4·45, tarsus 1·8.

*Adult Female* (Pagham, June). Resembles the male, but has the black on the head duller, the throat marked with white, the crest shorter, the upper parts generally duller, the wing-coverts green with a faint purplish tinge, not purple, and is, if any thing, a trifle less in size than the male.

*Young.* Differs from the female in lacking the black throat, the sides below the eye alone being marked with blackish; the pectoral band is small, and the feathers are edged with white here and there; the sides of the head and the nape are washed with buff; and the feathers on the scapulars and wing-coverts and, to a small extent, also on the back are terminally margined with buff.

*Nestling* (Kingsbury, near London). Upper parts rufous buff, marbled and blotched with black; underparts white, the breast alone crossed by a broad blackish band: entire body covered with short soft down.

A somewhat older bird than the above has the feathers on the upper parts just appearing; these feathers are dark bottle-green, broadly edged with fulvous; the head has no sign of a crest, but is blackish, mottled with fulvous buff.

*Adult Male in winter* (Yarmouth, February). Differs from the male in summer in having the throat pure white, the feathers on the pectoral band slightly tipped with white, and some of the feathers on the upper parts slightly tipped with light buff.

The Lapwing, so called from its peculiar flapping flight, or, as it is also frequently called, from its plaintive cry, the Peewit, is common in the northern and central portions of the Palæarctic Region during the summer, migrating southward from some of the northern countries, whereas in others, as in the British isles, it is found throughout the year. It is a common and resident species throughout Great Britain, being a summer visitant to the northern portion of our island, whereas in the southern parts of England flocks are to be seen throughout the winter; and it would appear that most of those which breed here remain all the year, though some may migrate southward at the approach of winter. As it is a shy bird, it is more numerous during the breeding-season in the northern and less-cultivated counties of England, but is recorded as breeding in every county. It used formerly to be exceedingly numerous in Norfolk and the fen-

counties—so much so that, according to Mr. Lubbock, a single egger took one hundred and sixty dozen in the marshes near Potter Heigham in 1821; and Messrs. Paget wrote in 1834 that a Yarmouth game-dealer was then in the habit of sending between six and seven hundred eggs to the London and other markets every week during the season. Mr. Stevenson, who quotes both the above references, says that "in the 'Broad' district the falling off in their numbers is very marked. Drainage and egging combined have here almost exterminated them in places." In the north of England and Scotland it becomes commoner, and is, Mr. Gray writes (B. of W. of Scotland, p. 263), "very abundant throughout the western counties of Scotland, and, indeed, over the whole of North Britain, with the exception of some parts of Sutherland and Caithness. It is very generally distributed in the breeding-season on many of the cultivated uplands, and is found in suitable places in great numbers, extending to the inner islands, but becoming much scarcer westward of that group." In Shetland, according to the late Dr. Saxby, it used formerly to be a somewhat rare species; but between 1854 and 1858 a colony of rather large size was founded on the south side of the voe at Balta Sound; and as the birds have not been molested, it is becoming a common species on that island.

In Ireland it is, owing to the prevalence of swampy localities, a common species throughout the island, being met with at all seasons of the year—in the winter collected, as elsewhere, in flocks, and in the summer scattered about in localities where they breed.

It is an extremely rare straggler in Greenland. Professor Reinhardt records (Ibis, 1861, p. 9) the occurrence of one at Julianehaab in 1847, and of a second on the 7th January, 1820, near Fiskenæsset; and, according to Faber, it occurs in Iceland, where, in the south-western districts, it is called "Isa-Kråka," which means Ice-Crow. It has not been known to breed in either of these countries, although, being a very hardy bird, it might well remain to breed. Captain Feilden says that "it appears now and again in the Færoes in spring and winter; Müller observed five on the 5th March, 1847, in a flock; in the winter of 1857 he saw several; and on the 20th November 1867 he had one brought to him at Thorshavn." It appears to be a common summer resident in Southern and Central Scandinavia. Collett says that "vast numbers breed at Jæderen and Listerland, in Christiansand Stift, and it is tolerably common along the west coast, both on the mainland and especially on the islands up to Smölen, but becomes rarer northward to Nordland, and does not pass above the arctic circle, but one was shot on the Varanger fiord in May 1868. It visits the southern fiords regularly in the spring and autumn, but is rare in the interior." In Sweden, according to Nilsson, it is one of the commonest Waders in the southern provinces, but has decreased in numbers of latter years. It is seen here and there in Halland, and is common in the islands of Bohus Län; in the interior it ranges as far north as Wermland, and on the east coast as far as Upland. It arrives very early in the spring, about the middle of February or from then to the middle of March, and leaves again late in September or in October. In Finland it only occurs (except as a rare straggler) in the southern parts of the country. Dr. Palmén writes (Finl. Fogl. ii. p. 103) that it arrives near Helsingfors late in March, and Nordenskjöld obtained young birds at Mantsälä. It breeds in the south-western portion of Finland at Åminne, at the mouth of the Salo river. Bergstrand states that it occurs on Åland; and Sahlberg has shot it at Tammerfors (61° 32′ N. lat.), where it breeds yearly on the Hatanpää estate. It rarely straggles far north; but one was

found dead on a roof in Brahestad, and Mr. Casimir Brander obtained a specimen on two occasions at Pudasjärvi, one in 1865 and one in 1868, both in the month of April. In Russia it occurs as far north as Archangel. Mr. Sabanäeff informs me that it breeds in the Olonetz Government, and is very common in some parts of Central Russia. In the Ural, he says, it does not range far north, but breeds in the Pavdinsk Dacha. On the Imsha (64° N. lat.) it is unknown, but is very numerous in the south-eastern and south-western districts.

In Esthland it is stated by Russoff to be very numerous, and is also said to be common in Poland and throughout Northern Germany in suitable localities during the summer season; and Borggreve states that Schauer met with it on the Tatra to an elevation of about 6000 feet above the sea-level. Mr. Benzon sends me some notes on its occurrence in Denmark, which I translate as follows:—"The only Danish name of this species known to me is 'Vibe,' which the peasantry, owing to the prevalent habit of turning a *b* to a *v*, corrupt into 'Vive.' In Schleswig, however, it is called (in the Low-German patois) 'Küvit.' With us it is always hailed with the Lark, Stork, Starling, and Swallow as a harbinger of the spring. The average date of its arrival in Denmark is as near as possible the 6th of March, the average temperature being about 0·9° Cent., and the average variation in the dates of its arrival spread over about forty days; but, as with all our other summer visitors, the date of its arrival varies according to locality and the season, so that in some places it usually arrives late in February and in others early in March. But the exceptions are numerous; for instance, in the winter of 1870, Lapwings were seen in Fÿen in December, in 1873 in Seeland in January, and in 1874 at Öresund early in February. In some localities it does not arrive in bad seasons until the 29th March; and from this it will be seen that the difference between the earliest and latest dates of its arrival is as much as three months. The dates of its departure are also somewhat irregular; but, as a rule, it leaves in August and September, though stragglers are seen as late as October and November, and it is just possible that during exceptionally mild winters a straggler or two may remain over winter with us." In Western Germany it is common, and breeds in suitable localities; and in Belgium it is stated to be very abundant during the nesting-season. In Holland, Mr. Labouchere writes, "this species has preeminently the right to be called a very common bird. It may be found in all marshy places and low grassy meadows, with which, as is well known, Holland abounds. It arrives in the first part of March, and leaves in September. About this time, however, other flocks of these birds arrive from the north-east, of which some individuals remain with us during the winter. As the eggs of this species are much sought after as a delicacy, considerable numbers of them are yearly exported from this country to England; and as this trade would soon greatly diminish and at last entirely exterminate these birds, it is determined by law at what time of the breeding-season the taking of Peewit eggs shall cease." In France the Lapwing breeds in some of the northern provinces, but is elsewhere observed during passage, and is said by Professor Barboza du Bocage to be a common species in Portugal. In Spain it both winters and breeds; but Colonel Irby writes (Orn. Straits Gibr. p. 159), "very few, compared with their numbers in winter, remain to breed in the marismas of the Guadalquivir, where I found the nest, with young, on the 26th of April. Curiously, none remain to breed about the Laguna de la Janda, or, as far as I could ascertain, anywhere but in the marisma. The majority of the Peewits arrive near Gibraltar about the middle of October, and take their departure north about the

first week in March." Passing eastward, again, we find it common in Savoy on passage; but it never remains there to breed; and in Italy it is also common, breeding in many parts of the north, and wintering in Southern Italy, Sicily, and Sardinia; and this is confirmed by Mr. A. B. Brooke, who speaks of it as very common in the latter island in winter, but adds that none ever remain there to breed. Mr. C. A. Wright includes it in his list of the birds of Malta, and says (Ibis, 1864, p. 142) that it passes in flocks from November to March, and that in 1861 some were shot as late as the 14th April. Lord Lilford found it very common in Albania throughout the islands and in the mainland in winter, but never observed any later than the beginning of March; and both Von der Mühle and Lindermayer speak of it as being a common winter resident in Greece, frequenting the marshy low lands; but it does not seem ever to remain there to breed. It breeds, however, in Southern Germany, and is, Dr. Fritsch states, common during the breeding-season in the damp plains of Bohemia. I observed it in the early spring on the Lower Danube; and in Southern Russia it is stated by Professor von Nordmann and Mr. Goebel to be numerous during the breeding-season, arriving, according to the latter gentleman, in the Uman district about the latter half of March, and leaving late in September or in October. It is a winter visitant in Turkey and Asia Minor; Strickland states that large numbers arrive in the neighbourhood of Smyrna when the cold weather sets in; and Canon Tristram says that he found thousands on the cultivated lands in Palestine, but only during winter.

It not only visits North Africa during winter, but some few individuals breed there. Captain Shelley says (B. of Egypt, p. 231) that it is very plentiful throughout Egypt up to the end of March, at which season they pass northward, leaving but few to breed south of Cairo. In Nubia they are much less abundant. Von Heuglin writes (Orn. N.O.-Afr. p. 995) that it visits Egypt and Northern Arabia in the winter and spring, and is observed singly or in small parties; Mr. von Pruyssenaere observed it in December on the banks of the White Nile. Referring to the above statement made by Captain Shelley to the effect that it breeds in the Nile delta, he says positively that, in the localities he (Von Heuglin) visited, it is only a migrant, and does not even occur every year.

Though, as a rule, it is only a winter visitant in North-western Africa, yet some few certainly remain to breed. Loche says that it is generally distributed in Algeria during the winter, and that a few penetrate as far as the Chamba country, where he shot specimens in December. According to Colonel Irby, Favier records it as numerous near Tangier in winter, arriving in October and November, and crossing back again to Europe in February and March. Colonel Irby himself observed three or four pairs late in April, which were nesting near the lakes of Ras-Dowra, at least eighty miles south of Tangier.

It occurs in the Canaries and at Madeira. Dr. Carl Bolle states (J. f. O. 1855, p. 176) that it is "a well-known winter visitant, and sometimes appears in great numbers at Fuerteventura;" Professor Newton possesses a specimen from Madeira; and Mr. Godman, who states that it occurs in the central group of the Azores, says that he saw a specimen said to have been shot in Terceira.

To the eastward it is met with as far as Japan. Ménétriés states that small flocks are met with on the roads near the Terek river, and on the shores of the Caspian at Kouby. Mr. Blanford writes that he never observed it in Baluchistan, Southern Persia, or on the plateau,

but it abounded in the plains of the Euphrates valley, near Basrah, in December. De Filippi met with some at Sultániah, a high plain south of Tabriz, in July. To this Major St. John adds that it breeds in the marshes about Asupas, north of Shiraz, and is common everywhere in Persia in the winter. Dr. Jerdon states that it is found in India only in the Punjab, where it breeds; but Mr. A. O. Hume expresses great doubt as to its ever having bred in the Punjab. Dr. Henderson obtained specimens between Kargallik and the city of Yarkand, and says that it seemed very abundant in all marshy places throughout the plains of Yarkand. Severtzoff states that it breeds throughout Turkestan at an altitude of from 8500 to 10,500 feet, and occurs in the north and south-western parts during winter, when, however, it is rare. It is found in Siberia, and is stated by Dr. Dybowski to be numerous at Darasun in Dauria. Mr. Maack frequently met with it in the Uda and Ingoda valleys, in Transbaikalia, in April, and obtained a specimen from the mouth of the Ssungari river, on the Southern Amoor. Dr. Radde met with it once on the Central Amoor, just above the Bureja Mountains, but at the Tarei-nor it appeared in numbers late in March, and remained to breed. Westward, on the shores of Lake Baikal, it is rare, as the locality is unfavourable; but still further west, on the Tunka plain, it is numerous. It is also met with in China; and Mr. Swinhoe says that it wanders down as far south as Canton, Swatow, and into Formosa in winter. According to Père David it breeds in Mongolia, but is rare at Pekin and Takow, even during migration. Temminck and Schlegel record it from Japan, where it is, they say, common enough in many parts. It does not occur in the Nearctic Region.

The Lapwing is essentially a bird of the lowlands and plains, being but seldom met with in elevated ground. It affects either wet, swampy localities or grassy places, avoiding the sea-coast, unless in the immediate vicinity of its favourite haunts, and it does not visit the woodlands. Shy and extremely cautious, it is extremely difficult of approach; and when flocks are feeding in the autumn on the ploughed lands and in the fields, there are always some few individuals scattered outside of the main flock, who give the alarm should any intruder approach; and the entire flock take flight at the first signal of alarm, and are soon out of danger. One of the first of the spring visitants that make their appearance after the winter has passed, it is everywhere hailed as a harbinger of spring, as the Swallow is of the summer. It arrives in the spring either in small scattered flocks or by twos and threes, not in large flocks like those which leave us in the autumn. Very shortly after arrival they commence breeding; and eggs are often found in the latter part of March in favourable seasons, though early in April appears to be the usual time when the eggs are deposited. The nest is situated either in a damp locality in the moors, or else in cultivated ground, usually away from frequented localities, as the bird is very jealous of intrusion; and as it is eminently sociable during the breeding-season as well as in the winter, one frequently finds several pairs breeding tolerably close together. The nest is merely a hollow scratched in the soil by the bird, worked into a cup-shape, and sometimes without any interior lining whatever, whereas at others the nest is found either slightly or tolerably well lined with leaves and fine rootlets. The number of eggs deposited is always four; should these be taken away the female again lays four, and if robbed a second time lays three, then two, and then discontinues laying. The eggs being looked on as a great dainty, and having being for long an article of trade, vast numbers are brought to the markets for sale. I tried to arrive at an approximate

estimate of the number sold in London during the season, but found it impossible to do so, as numbers of Redshank's, Golden Plover's, and even Black-headed Gull's and Rook's eggs are sold as being veritable Lapwing's eggs. Although difficult to find to any one who is unacquainted with the habits of the bird, yet to those who have been in the habit of seeking for them, the eggs are by no means hard to get; for by watching the male bird from a considerable distance one can safely calculate upon finding the precise locality where the eggs are deposited. The male bird has the curious habit of flying about in the immediate vicinity of the nest, throwing itself about in the air in the most peculiar manner, as if insane, uttering at the same time a peculiar call or wailing cry, which may almost be called the nuptial song of this species, and which, though it only consists of modifications of its usual wailing cry, is unlike its clear call-note *pēē-wĭt, pēē-wĭt.* This curious performance appears to be the utterance on the part of the male of intense pleasure, and is only observed when he is in the immediate vicinity of his mate. The female sits close; but should an intruder approach she steals quietly off her eggs long before he is in the vicinity of the nest, and after running crouched close to the ground for some distance will fly up and circle round the intruder, seeking to lure him from the nest. The attachment exhibited by both male and female for their eggs and young is very great. Should a Crow or any of the less noble birds of prey, such as Harriers or Kestrels, approach their nesting-places, they will collect and mob the intruder, generally succeeding in driving it off; and even should a sheep approach the nest the female will fly up and attempt to drive it off. When the young are hatched they are tended and guarded with the greatest assiduity by their parents, who will fly close round the head of any one who approaches the place where their young are concealed, uttering loud lamentations, and using every endeavour to lure him away; but so soon as the young can fly this intense anxiety on the part of the parents ceases, as the young can then shift for themselves.

In Denmark, Mr. Benzon informs me, it is "common, and breeds almost everywhere in low, damp localities, especially in grassy places, or sometimes in ploughed land. The nest is a mere depression in the soil on a tussock, but slightly lined with dried grass; and sometimes in damp places the eggs are wet." Referring to its peculiar habits during the breeding-season, and especially the curious aërial evolutions of the male, Mr. Benzon quotes a few lines from one of the Danish national songs, which, as it loses most of its force in translating, and but few of my readers would understand it if given in the original Danish, I do not reproduce here.

The food of the Lapwing consists chiefly of worms of various sorts; and it is, therefore, a most useful bird to the agriculturists. It also feeds on small land crustaceans and various kinds of insects and insect larvæ, but it does not appear ever to eat any vegetable substances.

The eggs of the Lapwing are, so far as my experience goes, always four in number; but Mr. Benzon informs me that he possesses a setting of five eggs taken on the 13th June, 1869, and that a friend of his has several times found five eggs in one nest. When fresh the ground-colour is brownish olive; but when blown the greenish shade fades and they become clay-brown; they are marked with a very few faint purplish brown shell-blotches, and are thickly blotched and spotted with blackish brown. Eggs in my collection from England and Holland vary in size from $1\frac{26}{40}$ by $1\frac{13}{40}$ to $1\frac{34}{40}$ by $1\frac{15}{40}$ inch, and are subject to some variation in shape, some being almost pear-shaped, whereas others are much stouter, all, however, tapering much towards the

smaller end. Mr. Benzon writes to me that he has "eggs light brown or brownish olive, some few being greyish brown or light greyish, with a few shell-markings and profuse blackish brown surface blotches; some of the varieties are roundish in shape, some much elongated, some spotted and blotched with dark grey on a greyish ground, others nearly white, and some but very sparingly blotched. The measurements are from 40 by 33·5 to 51 by 46 millims. One elongated egg measures 60 by 33 millims.; and one very small dark-coloured egg measures only 28 by 16·5 millims. He further writes that formerly the eggs were much sought after for food, but that of late, a strict law preserving the birds and prohibiting the taking of their eggs in Denmark having been passed, they are seldom taken.

I refer above to the practice of selling the eggs of this species in our markets, which are chiefly supplied from Holland; but Mr. Collett informs me that they have lately decreased greatly in number at Jaederen, in Norway, owing to the reckless manner in which their eggs have been collected. Mr. Bahr, who resides there, states that one season from three to four thousand eggs of this species were shipped to England from Egersund alone.

With regret I find myself compelled by the laws of priority to use the name of *Vanellus vulgaris* for the present species, instead of *V. cristatus*, by which latter it is so generally known, but have no alternative; for although Bechstein in his last work (Gemeinn. Naturg. 2nd ed. iii. p. 346) refers to it as "*V. cristatus*, mihi," yet many years previously (in his Orn. Taschenb.) he named it *V. vulgaris*; and Wolf and Meyer, who first (*l. c.*) used the name *V. cristatus*, were fully aware that Bechstein had forestalled them, as they refer to his work.

The specimens figured are the adult male in spring plumage and young bird above described, both being in my collection; particulars as to locality are given above.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Leadenhall Market, May 1868 (*H. E. D.*). *b*, ♂, *c*, ♀. Pagham, Sussex, June 20th, 1870 (*R. B. Sharpe*). *d*, ♂, *e*, ♀. Aboyne, Scotland (*J. Waters*). *f*. Central Russia (*Sabanäeff*). *g*, *juv.* Egypt (*Rogers*).

*E Mus. Capt. J. Biddulph.*

*a*. Sanju, 6500 feet, October 31st (*J. Biddulph*).

*E Mus. J. E. Harting.*

*a*, ♂ *ad.* Harting, Sussex, April 12th, 1869 (*J. E. H.*). *b*, ♀. Pagham, Sussex, September 28th, 1869 (*J. E. H.*). *c*, ♂. Yarmouth, February 1870 (*Gunn*). *d*, *e*, *pulli.* Kingsbury. *f*, *pullus.* Hungry Downs, Kingsbury, Middlesex, April 29th, 1868 (*J. E. H.*).

*E Mus. Howard Saunders.*

*a*, ♂. Tangier, January 1872 (*G. Olcese*). *b*, ♂. Valencia, March 9th.

## Genus STREPSILAS.

*Arenaria* apud Brisson, Orn. v. p. 132 (1760).
*Tringa* apud Linnæus, Syst. Nat. i. p. 248 (1766).
*Morinella* apud Meyer, Taschenb. deutsch. Vogelk. ii. p. 383 (1810).
*Strepsilas*, Illiger, Prodromus, p. 263 (1811).
*Charadrius* apud Pallas, Zoogr. Rosso-As. ii. p. 148 (1811).
*Cinclus* apud G. R. Gray, List of Gen. of B. p. 87 (1841).

The Turnstones, of which there are only two species known, *Strepsilas interpres* and *Strepsilas melanocephalus*, inhabit the major portion of the globe, being found in all the Zoogeographical Regions. They are essentially shore-birds, frequenting shingly and rocky portions of the sea-shore. They feed on insects and their larvæ, small crustaceans, marine worms, &c., not unfrequently turning over the small stones in search of food. Their call-note is a clear, loud whistle uttered slowly at first, and then more rapidly. They run with great swiftness, often consorting with other Waders; and their flight is swift and strong, generally in semicircular curves, as the bird now glides close to the water and now at some altitude in the air.

They breed in the vicinity of the sea, their nest being a mere depression in the ground, sparingly lined with a few grass-bents; and their eggs, four in number, are greenish grey, more or less blotched and spotted with purplish grey and dull brown or olivaceous brown.

*Strepsilas interpres*, the type of the genus, has the bill rather shorter than the head, slightly bent upwards beyond the middle, compressed until towards the end, when it becomes depressed, tip rounded, blunt; nasal groove about half the length of the bill; the gape-line slightly curved upwards; nostrils linear, subbasal, pervious; wings long, pointed, the first quill longest, inner secondaries elongated, pointed; tail moderately short, slightly rounded; legs moderately long, slender; tibia bare for a short distance; tarsus rather short, compressed, anteriorly scutellate; hind toe small, the anterior toes moderately long, very slightly webbed at the base; claws moderately short, compressed, arched, obtuse, that on the hind toe much more curved, and that on the middle toe with the inner edge slightly dilated.



TURNSTONE.

STREPSILAS INTERPRES

# STREPSILAS INTERPRES.

(TURNSTONE.)

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*Arenaria*, Brisson, Orn. v. p. 132 (1760).
*Arenaria cinerea*, Brisson, tom. cit. p. 137 (1760).
*Le Coulon chaud*, D'Aubenton, Pl. Enl. no. 856 (1765).
*Le Coulon chaud de Cayenne*, D'Aubenton, op. cit. no. 340 (1765).
*Le Coulon chaud gris de Cayenne*, D'Aubenton, op. cit. no. 857 (1765).
*Tringa interpres*, Linn. Syst. Nat. i. p. 248 (1766).
*Tringa morinella*, Linn. tom. cit. p. 249 (1766).
*Tringa hudsonica*, P. L. S. Müll. Syst. Nat. Suppl. p. 114 (1776).
*Le Tourne-pierre*, Buffon, Hist. Nat. 1st ed. viii. p. 130 (1781).
*Morinella collaris*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 383, footnote (1810).
*Strepsilas interpres* (L.), Illiger, Prodr. p. 263 (1811).
*Strepsilas collaris* (Meyer), Temm. Man. d'Orn. p. 349 (1815).
*Arenaria interpres* (L.), Vieill. Nouv. Dict. xxxiv. p. 345 (1819).
*Tringa oahuensis*, Bloxham, in Byron's Voyage of the 'Blonde,' App. 251 (1826).
*Charadrius cinclus*, Pall. Zoog. Rosso-As. ii. p. 148 (1831).
*Strepsilas borealis*, C. L. Brehm, Vög. Deutschl. p. 559 (1831).
*Strepsilas littoralis*, C. L. Brehm, tom. cit. p. 560 (1831).
*Cinclus morinellus*, G. R. Gray, List of Gen. of B. p. 87 (1841).
*Cinclus interpres* (L.), G. R. Gray, Gen. of B. iii. p. 549 (1846).
*Strepsilas minor*, C. L. Brehm, Vogelfang, p. 285 (1855).
*Strepsilas collaris vulgaris*, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 12 (1863).
*Strepsilas collaris borealis*, A. E. Brehm, ut suprà (1863).
*Strepsilas collaris littoralis*, A. E. Brehm, ut suprà (1863).
*Strepsilas collaris minor*, A. E. Brehm, ut suprà (1863).
*Strepsilas collaris pusilla*, A. E. Brehm, ut suprà (1863).

*Le Tourne-pierre*, French; *der Mornell-Steinwältzer*, German; *Vuelve-piedras*, Spanish; *Voltapietre*, Italian; *Steenlooper*, Dutch; *Veidetitte*, *Flyr*, Danish; *Tjaldurs-grealingur*, Færoese; *Tildra*, Icelandic; *Stendrejer*, *Ringkjeld*, Norwegian; *Höttring*, *Roskarl*, Swedish; *Luotolainen*, Finnish; *Severnaya-Kamnesharka*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 856, 857; Werner, Atlas, *Coureurs*, pl. 18; Kjærb. Orn. Dan. taf. xxxi.; Fritsch, Vög. Eur. taf. 34. figs. 2, 8; Naumann, Vög. Deutschl. taf. 180; Sundevall, Sv. Fogl. pl. xxxvii. fig. 6; Gould, B. of Eur. pl. 318; id. B. of G. B. iv. pl. lx.; Schlegel, Vog. Nederl. pl. 218; Roux, Orn. Prov. pl. 281; Audubon, B. of Am. pl. 323; Wilson, Am. Orn. pl. 57. fig. 1.

♂ *ad. ptil. æst.* pileo et nuchâ albis nigro striatis : dorso centraliter ferrugineo, lateraliter nigro, dorso reliquo cum scapularibus nigris ferrugineo immixto, uropygio albo : remigibus nigro-fuscis, versus apicem saturatioribus, primariis intimis ad basin albis, secundariis albis nigro-fusco apicatis, intimis brevioribus nonnullis albis immaculatis : tectricibus alarum pallidè ferrugineis, exterioribus nigro notatis, majoribus latè albo terminatis : supracaudalibus caudæ proximæ albis, brevioribus nigris : caudâ albâ, fasciâ magnâ subapicali nigro-fuscâ, rectricibus duabus centralibus fere omnino nigro-fuscis : a basi rostri supernè ad oculos striâ nigrâ, et unà cum genis nigris ad collum laterale conjunctâ : facie laterali reliquâ albâ : gulâ albâ, gutture et pectore toto superiore (maculâ albâ utrinque exceptâ) saturatè nigris : corpore reliquo subtùs purè albo : rostro nigro : iride fuscâ : pedibus rufescenti-aurantiacis, unguibus nigris.

♀ *ad. ptil. æst.* mari similis sed sordidior, capite summo et nuchâ saturatioribus, corpore suprà minus ferrugineo notato, et fasciis nigris in capite cum pectore obscurioribus.

♂ *ad. ptil. hiem.* ubique obscurior, minus ferrugineo notato, pectoris plumis albido apicatis et abidis immixtis.

*Adult Male in summer* (Hitteren, Norway, June). Crown and nape white, each feather with a black central line; forehead, sides of the crown, hinder portion of the auriculars, a large spot in front of and rather below the eye, and throat pure white; a narrow band of jet-black passes over the forehead connecting the eyes, below which it widens into a large patch, joining a broad black stripe passing from the lower mandible to the breast; centre of the dorsal region chestnut, the sides being jet-black; rest of the back and scapulars varied black and chestnut; quills blackish brown, with white shafts; inner primaries white at the extreme base, secondaries white, excepting on the terminal portion, where they are dusky blackish grey, some of the inner ones pure white; smaller wing-coverts pale chestnut, varied with black and brown; larger coverts blackish brown, broadly tipped with white; rump white; upper tail-coverts intermixed black and white, the smaller ones black, and the longer ones being white; tail white, with a very broad subterminal black band, which on the central rectrices covers a much larger area than on the rest; breast and extreme upper part of the flanks velvety black, except that on each side there is a white mark near the base of the wing, rest of the underparts pure white; bill blackish; iris dark brown; legs orange-red. Total length about 9 inches, culmen 1·0, wing 6·0, tail 2·5, tarsus 1·0.

*Adult Female* (Jæderen, Norway, June). Differs from the male above described in having the head and nape much darker, the chestnut on the upper parts less developed, the black markings on the head less clear, and the black on the breast covering a smaller area.

*Adult in winter* (Djeddah, Rea Sea, December). Differs from the male above described in having less chestnut in the plumage, and in having the black portions of the head, neck, and breast obscured by white tips to the feathers, and intermixed with white feathers.

*Young* (Pagham, Sussex, July). Head and nape dull dark brown, marked with black; upper parts blackish brown, the feathers being tipped and margined with dull light brown, on the larger wing-coverts, however, with reddish brown; scapulars like the back; quills and tail as in the adult; sides of the head brownish, intermixed with white; throat white; breast dull dark brown, in the centre and lower portion merging into black; rest of the underparts white.

*Nestling* (about three days old, *fide* Collett). Covered with down; blackish grey, slightly washed with yellowish, and here and there tipped with black; along the crown is a narrow black band reaching to the forehead, though not quite to the base of the bill; a similar stripe extends from the base of the upper mandible to the eye; and there is a black spot at the gape; sides of the throat grey; belly white; wings and scapulars coloured like the back.

3

The Turnstone is certainly one of our most widely distributed and cosmopolitan birds, being met with in almost every part of the world.

In Great Britain it is common during the two seasons of migration, and many remain in some parts of our coast throughout the winter; but it has not with certainty been ascertained to breed in any portion of the United Kingdom, though I think it not improbable that it does remain to nest in the northern portions of Scotland or on the islands. In the spring and autumn it is tolerably numerous on our east and south coasts, more especially on the latter. Referring to its occurrences on the coast of Norfolk, Mr. Stevenson writes (B. of Norf. ii. p. 113) as follows:—"This cosmopolitan species visits us regularly, though not very numerously, in spring and autumn, and, except during extremely severe weather, some few may be met with throughout the winter, with stragglers, at times, in every month of the year. By the end of July or beginning of August small family groups make their appearance on Breydon and other parts of the coast, where they consort with Sanderlings, Dunlins, and Ringed Plovers; and, considering the lateness of their stay with us in spring, their return in so short a time with young well able to accompany their parents is a fact of special interest in studying the habits of these migratory tribes. At Blakeney, a favourable point of the coast for this species, where, from its habit of turning over sea-weeds and other marine substances in search of food, it is known by the appropriate name of '*Tangle-picker*,' Mr. Dowell has observed small flocks of seven or eight in the harbour as early as the 20th and 29th of July; and on the 30th of July, 1852, he noticed several families in the 'narrows,' apparently just arrived, mingling with small parties of Sanderlings and Dunlins. By the middle of September he has known them to arrive more thickly; and on one occasion, on the 2nd of October, he saw a flock of about fifteen near the 'freshes.' On the 12th of August, 1865, a young bird of the year was killed on Cromer beach; on the 24th of October, 1867, Mr. J. E. Harting shot a solitary specimen on Breydon; and on the 13th of November of the same year two females were killed at Blakeney; whilst my own and Mr. Dowell's notes supply instances of their appearance both at Blakeney and on the shores of the Wash in the months of January and February. At Yarmouth, Mr. Frere tells me, they are rarely, if ever, seen in winter. Their spring migration takes place about the second week in May; and between the 12th and 20th of that month, according to the season, small flocks make their appearance on Breydon, as well as on the beach at Yarmouth and other suitable localities; and these, like the Knots, Godwits, and Grey Plover that arrive at the same time, are for the most part in full nuptial plumage, resting only for a day or so, and then passing on expeditiously to their more northern breeding-grounds."

In the south I have frequently observed it in various parts of the coasts of Kent and Sussex during the late autumn, and have had numbers of specimens from Pagham Harbour. It is met with in the Channel Islands; and Mr. Cecil Smith says, "in Guernsey it seems to make its appearance in about the same numbers and about the same time as on our coast. I have seen the old birds with their young there in July, and shot a very finely plumaged old bird there in that month; but from the middle of August to November they appear more common, and I have shot them in November in various states of change of plumage." On the west coast it is quite as numerous as on the eastern side or south coast; and in Somersetshire, Mr. Cecil Smith informs me, it is "a rather numerous autumnal visitant to the coast; many of the

autumnal arrivals remain throughout the winter. A few birds remain throughout the year; but these are probably non-breeding birds. Mr. Haddon, of Taunton, procured a full-plumaged bird as late as the 1st of June; and by the middle or end of July the old birds again make their appearance with their young."

In Scotland it is, Mr. Robert Gray says, commonly distributed over the coast, remaining in some of the western counties until the second week of June, and reappearing in the outer islands about the middle of August. Mr. T. E. Buckley informs me that he has seen it on the west coast of Harris in July, and fully believes that it breeds there. Dr. Saxby also states (B. of Shetl. p. 171) that he saw a Turnstone on the 16th June between Skioting and Clugan on Unst, and found a nest with three eggs which he believes to be those of the Turnstone; but he does not appear to have had any authentic eggs of that species to compare them with, as he compares them with the plate in Mr. Hewitson's well-known work on oology.

In Ireland it is, Thompson says, met with annually around the coast, always in autumn, and occasionally at other seasons of the year.

It is found in Greenland, and was met with by the last German Arctic Expedition in October 1869 on Sabine Island, and early in August at Cape Broer Ruys. Holböll states that it breeds both in North and South Greenland. According to Professor Newton (Baring Gould's Iceland, p. 411) "it is said by Faber to be of commoner occurrence in the south and west than in the north of Iceland; yet he found it on Grimsey in June 1820. It arrives in Iceland about the last week in April, and, I have little doubt, breeds there; for Mr. Proctor has received its unmistakable eggs from the north. It mostly leaves again in the autumn; but Faber obtained one at Reykjavik on the 11th December, 1820. In 1858 it was very common in the south-west about the end of May." It is not recorded by Landt from the Færoes; but Captain Feilden writes, "Wolley noticed it in a small flock, but could get no indication of its breeding. Müller thinks that it breeds in Færoe; and I have little doubt that it does. We saw it frequently both in flocks and single pairs throughout the islands. At Hoivig Holm, near Thorshavn, I noticed a pair on the 21st June. On the shores of the island of Videroe they were especially numerous; near to the landing-place of the village of Videroe I counted on the 9th June fully a hundred feeding on the rocks at ebb-tide in company with *T. maritima*; though collecting in flocks of ten or a dozen when scared, they were evidently all paired. On other portions of the shores of the north isles I noticed single pairs, which I thought must be nesting; but a careful search on my part failed to discover the nests. The fishermen, who are well acquainted with the bird, assured me that it continued the summer through." Throughout Scandinavia it is common during the summer season; and some few remain there over the winter. Mr. Robert Collett writes to me that "it breeds more or less numerously all along the Norwegian coast to the North Cape and East Finmark, and is met with above the Arctic circle, though there more sparingly and scattered; still it breeds on the Porsanger fiord and Varanger fiord, as well as the other larger fiords in Lapland. In the autumn it is numerous on the western and southern coasts of Norway, as at Jæderen and Listerland, in Christiansands Stift. It very rarely enters within the fiords, and never occurs in the higher portions of them, but invariably frequents the outer rocks on the coast-line where the tide ebbs and flows, and where there is a luxuriant growth of sea-weed. Small flocks remain annually over winter on the west

coast; and the most northern locality in which I have known it to winter was off the Trondhjemsfiord in 64° N. lat., where it was met with in company with the Purple Sandpiper." On the Swedish coast it is met with up to the head of the Gulf of Bothnia, usually frequenting the outer fringe of islands. In Finland it is common on the coast, and breeds in tolerable numbers at least as far north as Wasa, in the outer fringe of islands that skirt the coast. I obtained it during the summer at Uleåborg, where, however, it was not very common. Von Middendorff records it from the eastern coast of Lapland; and it occurs on the shores of the White Sea. It was met with by Von Baer on Novaja Semlia (Nova Zembla); and Professor Newton included it in his list of the birds of Spitzbergen with a note of interrogation; but subsequently his conjecture proved quite correct, as, according to Professor Malmgren (Ibis, 1869, p. 230), a pair were seen on Amsterdam Island, one of which was shot, and is now in the Stockholm Museum. Mr. Sabanäeff informs me that it has been met with during migration in the Governments of Moscow and Jaroslaf, in Central Russia; and he once observed it near Ekaterinburg during the spring migration. It is met with on the southern shores of the Baltic; but, according to Borggreve, it is not common, and appears to remain during the summer only on some portions of the coast, though it is very generally met with during migration. It appears to be most frequently met with on Rugen and the adjacent islands. Sometimes it is met with in the interior during migration, and has been recorded from Eisleben and Münster. Dr. Rey, in his notes on the ornis of Halle, Saxony, says that Naumann states that it has been met with at the Salzigen See, and he himself believes that he saw it there in May 1866.

Kjærbölling writes that it arrives in Denmark in April, and leaves in August or September. He found it breeding on the islands off Fyen, as also at Blaavandshuk, Læsö, Hjortholmen, and Hirtsholmen. Mr. Steenberg obtained it from near Helsingör; it breeds at Laaland; and Mr. Fogh observed it at Falster. It also, according to Scheel, breeds on Möen, at Saltholm, near Amager, and Muusholm, in the Great Belt, and is also said to breed on Bornholm and Christiansö.

Baron von Droste Hülshoff only observed it on the Island of Borkum during migration; and Mr. Labouchere informs me that in Holland it is only now and then seen during winter, when it frequents the dykes and breakwaters. Baron De Selys-Longchamps records it as occurring regularly during passage on the Belgian coasts, sometimes also visiting the interior; and in France it is tolerably numerous on the coasts in autumn, being met with southward to the Mediterranean. It is stated by Professor Barboza du Bocage to be rare in Portugal; and Mr. Howard Saunders informs me, "in Catalonia it is known as '*Ramena rocs*,' and, though nowhere numerous, it is found wherever the nature of the coast is suited to its habits, as far south as Malaga, beyond which I have not actually observed it, though it doubtless occurs." Mr. A. von Homeyer met with it in the Balearic isles, on the sea-shore not far from Palma; and he was led to believe that it breeds there. It has been recorded from Savoy; is of rather rare occurrence in Italy; but on the coasts of Sicily is regularly met with at the two seasons of migration. Mr. A. B. Brooke writes (Ibis, 1873, p. 338) that it is not common in Sardinia, but a few pass there on the spring migration; and Mr. C. A. Wright speaks of it (Ibis, 1864, p. 148) as being a rather irregular visitor on Malta and Gozo, and somewhat rare. It generally appears in May, August, and September; but he has shot it there in December; and he further writes

(Ibis, 1865, p. 466) as follows:—"As every record of rare visitors is interesting, I may here mention that an adult male and female, in breeding-plumage, of this species were shot on Fort-Manoel Island in the third week of May, and later in the same month three others were exhibited for sale in the market." Lord Lilford only once met with it in Greek waters, when on the way to Antivari on board H.M.S. 'Ariel' in December 1857; and both Von der Mühle and Lindermayer state that it is met with on the shores of Greece only during the two seasons of migration, and is very rare. The latter says that it does not occur on the islands of the Archipelago. I may here name that, according to Dr. A. Fritsch (J. f. O. 1871, p. 385) specimens, which are now in Feldegg's collection, are said to have been killed in Bohemia. Messrs. Elwes and Buckley write (Ibis, 1870, p. 330) that it is occasionally seen on the coasts of Turkey; and Von Nordmann states that it is met with in pairs or small flocks on the shores of the Black Sea in April, and again in October. Eversmann speaks of it as being common on the shores of the Caspian; and it doubtless visits the shores of Asia Minor and Palestine.

In North-east Africa it is common; and Von Heuglin (Orn. N.O.-Afr. p. 1038) writes, "in the winter season it is found all along the coast of Egypt, where we have shot it in summer plumage in May. On the shores of the Red Sea it is commoner; and I feel sure that it breeds there. In July 1857 I observed it in pairs on the small coral islands in the vicinity of Sanakin, and in September saw young and old birds at Ras Belul (in 10° 30′ N. lat.)—in October, November, and December in flocks in various portions of the east coast of Africa, southwards to Zela and Berbera. . . . . We never saw it in the interior; but Vierthaler observed it on the White Nile." On the western coast of North Africa it also occurs; and is stated by Loche to occur in Algeria during the two seasons of migration. Drs. Reichenow and Lühder did not meet with it on the west coast of Africa, and remark (J. f. O. 1873, p. 212) that it is somewhat curious that it was not observed there. It occurs on the Canaries and Azores. Vernon Harcourt records it from Madeira; and Mr. F. DuCane Godman writes (Ibis, 1866, p. 100) that "a few pairs are always to be found about the rocks between Santa Cruz and Ponta Delgada, in Flores. I killed some specimens in June in full breeding-plumage, and I suspect that it must breed on some of the small islands near the coast; but the weather was so stormy all the time I was in Flores, that I was unable to get out to them. It is said to remain there the whole year. I afterwards saw eight birds of this species near Capellas, in Fayal; and I believe a few are to be found on the coast of any of the islands where the rocks provide sufficient protection from the surf." And again (Ibis, 1872, p. 221) he says, "this bird undoubtedly breeds in Flores, in the Azores, and, I think, probably, in the Canaries, where it is not uncommon in suitable places on the coast. As there is but little beach or low rocky coast, it finds but few places adapted to its habits. Webb and Berthelot consider its appearance only accidental." Dr. Carl Bolle, writing on the ornithology of the Canaries, says (J. f. O. 1857, p. 336), "according to my experience it is in these districts a not very common, but constant inhabitor of the shores where the coast is flat and covered with small stones. Not only in Fuerteventura, but also on the coast of Canaria, near Maspalomas, I observed it in pairs, and am quite positive that it breeds there."

On the mainland of Africa it is met with as far south as the Cape of Good Hope. Pel records it from the Gold Coast, Verreaux from the Gaboon, Welwitsch from Angola, Anchieta from Benguela; and Mr Andersson states (B. of Damara Land, p. 276), it "is pretty common

all along the south-west coast of Africa, and is found either in pairs or in small flocks. I never met with the nest of this species in Africa, although I was acquainted with its mode of nidification, from having seen its nest on the coast of Sweden;" and Mr. E. L. Layard writes (B. of S. Afr. p. 301) as follows:—"The Turnstone is a constant resident on these shores, extending upwards as far as the equinoctial line. It frequents rocky places in preference to sandy beaches, feeding on small crustaceans, shells, and the various insects which infest the decaying sea-weed. They usually keep in small families of from four to eight, do not appear to mingle with the Sandpipers, and are wary and difficult to approach. I fancy it must breed on Robben Island, among the rocks at the northern end, having seen young birds in that neighbourhood."

On the east coast of Africa it is recorded (Ibis, 1864, p. 301) from the Zambesi district; and the late M. Jules Verreaux saw several specimens from Madagascar. Professor Newton also writes (Ibis, 1863, p. 455) that it was seen on the sands at Hivondrona on the 9th of September, and on the sea-shore near Foule Point on the 16th of that month; and Mr. E. Newton states (Ibis, 1865, p. 150) that he saw a flock of some six or seven birds on the Island of Rodriguez. It has been recorded from Mozambique; and Dr. Kirk states (Ibis, 1864, p. 332) that he met with it on the shores of Lake Nyassa.

In Asia the present species has a very wide range. Von Middendorff, who met with it in North Siberia, says that it arrived at the Taimyr in $73\frac{3}{4}^{\circ}$ N. lat. on the 4th June, was found breeding on the 10th July, and on the 24th he caught fledged young. About the 10th August they all left. On the Boganida he shot the first on the 25th May, and found several pairs breeding at the latter end of June. On the 9th August he shot specimens in winter dress on the large Shantár Island. According to Mr. Taczanowski (J. f. O. 1873, p. 101) Dr. Dybowski met with it not uncommonly during migration in Kultuk, in Darasun. In the autumn it arrives about the 20th July, and remains until the early part of October. Severtzoff says (Turk. Jevotnie, p. 69) that it is met with in Turkestan during migration in the Karatau and Western Thian-shan mountains, and has been observed on the Aris, Kelless, Chirchick rivers, and their tributaries. Henderson, who met with it on the Yarkand Expedition, says (Lahore to Yarkand, p. 286) "a single pair was obtained—the male near the city of Yarkand, on the 2nd of September, and the female at Posgám, on the 6th of September. They were in an intermediate stage of plumage, between the summer and winter dress. These birds were probably on their return journey from the northern breeding-haunts to the coast of India; it does not appear likely that they can reside for any length of time in a far inland country like Yarkand, devoid of lakes even, a mere plain of sand traversed by narrow vein-like streams scantily fringed with vegetation." Mr. A. O. Hume met with it on the Mekran coast; and Dr. Jerdon writes (B. of India, ii. p. 657) as follows:—"The Turnstone is not a common bird in India, and chiefly frequents the sea-coast and rocky beds of large rivers. I have procured it above 200 miles inland, in the Deccan, on the edge of a large tank, and more abundantly on the sea-coast near Madras; Mr. Blyth has frequently obtained it from the Calcutta bazaar. It is found throughout both continents, chiefly on the sea-coast." Mr. Swinhoe met with it in China during the winter, and says that it arrives at Formosa in small flocks, and departs about the same season as the Sanderling; and he further writes (Ibis, 1870, p. 361), "we found large numbers of these on the Poochin river (N.W. Hainan) on the 5th of March. They sat on the fishing-stakes, and ranged

themselves in rows on the ropes that ran from stake to stake. The four specimens I brought away are all acquiring the summer plumage." It doubtless occurs in Japan, as Temminck and Schlegel say that they have seen it figured in a Japanese drawing. Southward it ranges very far. Captain Beavan and Lord Walden both record it from the Andaman Islands; and, according to Finsch and Hartlaub (Beitr. Faun. Centralpolyn. p. 200), specimens are in the Leyden Museum from Java and Banka, Timor, the Moluccas, Ternate, Halmahera, Morotai, Ceram, and Celebes; Rosenberg obtained it in New Guinea; and Gould (B. of Austr. ii. p. 269) says that he never saw it in Tasmania or Southern Australia, but most of the specimens from Raine's Islet and other parts of Torres Straits were in breeding-dress; during migration it is, he says, dispersed over every part of the coasts of Southern Australia, the islands in Bass's Straits, and Tasmania, all of which, as well as the Houtmann's Abrolhos, off the western coast, are visited by it. It has been met with in New Zealand; and Mr. Buller (B. of N. Zealand, p. 222) records the capture of several specimens on Ninetymile Beach, in the Province of Canterbury, in winter plumage; and Captain Hutton informed him that he had seen a specimen, in full summer plumage, shot in April. The expedition obtained it on the Marianne Islands and Stewart's Island in September and October. Verreaux records it from New Caledonia, Gray from the New Hebrides and Aneiteum, Peale from the Kingsmill group, Mathew Island, and the Viti Islands, Gräffe from the Samoa Islands, and Bloxham (*l. c.*) from the Sandwich Islands.

On the American continent the distribution of this species is almost equally wide, as it is found from the Hudson's-Bay Territory down to the southern portion of South America. Captain Blackiston states (Ibis, 1863, p. 130) that he received several specimens from York Factory, where he observed it in August; and in the 'Fauna Bor.-Am.' Mr. Ross gives it as a rare bird on the Mackenzie. On the east coast of North America I observed it on the shores of the Bay of Fundy, where, however, it is rare. It is met with during the seasons of migration, or in the winter, on the shores of eastern North America in tolerable numbers. Dr. Elliott Coues says that in North Carolina it is very common during migration, and some winter there. In May, he writes, "just before they leave, very perfect specimens may be procured. They begin to return the last of August, and soon become abundant. Many of the old birds at this time retain much of their spring attire, and are thus readily distinguished from the young." I met with it in Texas; and, as stated by me in 'The Ibis' (1866, p. 34), "I found several birds of this species quite close to the town of Galveston on the 26th of May, 1864; and on the beach to the westward there was a good number of them. On my second visit to Galveston, in June, I saw a few, but not so many as on the above-mentioned occasion." On the west coast it was met with by Messrs. Dall and Bannister in Alaska, where, Mr. Dall says, it was not common at the mouth of the Yukon; and, according to Dr. Finsch, it was obtained at Amachnak, near Unalaschka, at the end of August, by Von Kittlitz. Southward it is met with as far as Chili. As above stated, I met with it in Texas. Mr. G. N. Lawrence says (Mem. Bost. Soc. Nat. Hist. 1874, p. 308) that it was obtained by Xantus on Rio Zacatula, in Mexico; Salvin states (Ibis, 1866, p. 198) that it occurs on both coasts of Guatemala; Barclay records it from Ecuador, Schomburgk from the east coast of Guiana, Burmeister from S$^{ta}$ Catharina, Darwin from Peru; specimens were obtained on the Novara expedition, and are in the Leyden Museum, from Chili; and Darwin records it from the Galapagos. On the islands in the Atlantic it is recorded by Bryant from

the Bahamas in April, and Wedderburn and Hurdis met with it in the Bermudas; Dr. Gundlach speaks of it as being common on the sea-shore in Cuba from September to May; Gosse met with it in Jamaica; and Professor Newton and his brother, Mr. E. Newton, met with it in April 1857, and September 1858, on the island of St. Croix. On the west coast of North America the present species is replaced by a much darker species (*S. melanocephalus*), which differs in having the upper surface of the body blackish brown, and the head, neck, and breast sooty brown, the feathers on the breast with dark markings at the tip, and no rufous in the plumage.

In its habits the present species is a true shore-bird, frequenting, so far as I can judge from personal experience, the rock-bound rugged portions of the coasts in preference to the marshy mud flats where the other Waders are usually to be met with, though it may also be occasionally, though rarely, seen in these latter localities. It feeds on the larvæ of various sorts of insects, small crustaceans, and marine worms, which it picks up from amongst the stones or on the ground. It runs with celerity, and may not unfrequently be found consorting with other Sandpipers, especially Dunlins. Its flight is generally in semicircular curves, the wings being not fully extended, but sickle-shaped; and it propels itself by quick powerful strokes of the wing. It turns with ease, and is now to be seen gliding down close to the water, now tolerably high up in the air. Its note is a clear and loud whistle, resembling the syllables *kee*, *kee*, *kee*, first uttered slowly, and gradually accelerated. Its alleged habit of turning stones (from which its name is derived) has been noticed by but few observers; and I myself have never seen it do so. Audubon, however, relates an instance, from personal observation, of its stone-turning propensity, and, speaking of four he observed on Galveston Island, says "they merely ran a little distance out of our course, and, on our returning, came back immediately to the same place; this they did four different times; and after we were gone they remained busily engaged in searching for food. None of them were more than from fifteen to twenty yards distant; and I was delighted to see the ingenuity with which they turned over the oyster-shells, clods of mud, and other small bodies left exposed by the retiring tide. Whenever the object was not too large the bird bent its legs to half their length, placed its bill beneath it, and with a sudden quick jerk of the head pushed it off, when it quickly picked up the food which was thus exposed to view, and walked deliberately to the next shell to perform the same operation. In several instances, when the clusters of oyster-shells or the clods of mud were too heavy to be removed in the ordinary way, they would not only use the bill and head, but also the breast, pushing the object with all their strength, and reminding me of the labour which I have undergone in turning over a large turtle. Among the sea-weeds which had been cast on the shore, they used only the bill, tossing the garbage from side to side with a dexterity extremely pleasant to behold. In this manner I saw these four Turnstones examine almost every part of the shore along a space of from thirty to forty yards."

About the first week in June the Turnstone deposits its eggs, its nest being a mere depression in the soil, sometimes sparingly lined with a few grass-bents, the locality selected being usually, if not always, a sandy or rocky soil. On the island of Rügen, Naumann says, it breeds regularly in sandy flats covered with heath and a few scrubby juniper bushes, and also in bare sandy places; and Mr. R. Collett writes repecting its nidification on the Norwegian coast as follows:—"The last few years I have examined a considerable number of the nests of this

species, in particular on the coast of Namdalen, in June 1871. They are mostly built under large stones, or beneath broad-leaved plants (*Archangelica littoralis*, or juniper bushes); and several pairs were generally found breeding in close proximity. The eggs, invariably four in number, were quite fresh in the middle of June. In their breeding-haunts the birds exhibited great alarm, but did not, like the *Charadrii*, feign to be wounded. Incubation-spots were found in both sexes. The stomachs of those examined contained small coleoptera, the young of *Littorinæ*, small crustaceans, coarse gravel, and scales of fishes, the latter perhaps swallowed accidentally."

I possess a series of the eggs of this species from Sweden, Norway, Finland, and Denmark, which are dull greenish grey in ground-colour, and are more or less spotted and blotched with dull purplish underlying shell-markings, and dark brown overlying surface-blotches, some having these latter small and closely scattered over the surface of the shell, whereas in others they are larger and more scantily strewn. One egg is dull light olive-green, with but few markings, except at the larger end, where it is rather heavily blotched.

The specimens figured are an old male in full breeding-plumage, and a young bird of the year, in my collection, these being the specimens described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀, *b*, ♂. Pagham, Sussex, May 1867 (*H. E. D.*). *c*, ♀, *d*, *e*. Pagham, July 1870 (*R. B. Sharpe*). *f*, ♂. Pagham, May 4th, 1870 (*R. B. Sharpe*). *g*, ♂, *h*, ♂, *i*, ♀, *k*, ♂, *l*, ♀, *m*. Pagham, June 6th, 1872. *n*, ♀. Jaederen, Norway, June 1872 (*R. Collett*). *o*, ♂. Hitteren, Norway, June 1870 (*R. Collett*). *p*, ♀, *q*. Uleåborg, Finland, May 1861 (*H. E. D.*). *r*. Djeddah, Red Sea, December (*S. S. Allen*).

*E Mus. E. Hargitt.*

*a*, ♀, *b*, ♂. Clestron shore, Stromness, winter (*T. H. Dunn*). *c*, ♂. Havre, August 13th, 1873 (*Pluche*).

*E Mus. J. H. Gurney, jun.*

*a*, ♀. Rye, Sussex, May 18th, 1868 (*Gasson*). *b*, ♀. Tees-mouth, May 30th, 1868. *c*, ♂. Thornham, February 11th, 1867 (*Wilson*). *d*. Fern Islands, April 25th, 1866 (*J. H. Gurney*). *e*, ♂. Blakeney, Norfolk, August 5th, 1872.

*E Mus. J. E. Harting.*

*a*. Orkney, Stromness (*Dunn*). *b*, ♂. Aldborough, Suffolk, September 14th, 1874. *c*, ♂, *d*, ♀. Pagham Harbour, Sussex, May 14th, 1867. *e*. Christchurch, Hants, April 17th, 1872. *f*. Instow, Devon, September 23rd, 1870. *g*. Morocco. *h*. Algiers. *i*. Aden, October 16th, 1873. *k*. Gambia. *l*. Siberia (*Dybowski*). *m*. Amoy, November 1866 (*Swinhoe*). *n*, ♂. Wahai, April 28th, 1867. *o*, ♀. Mauritius, January 21st, 1865. *p*, ♀. Possession Islands, October 10th, 1861. *q*. Labrador (*Möschler*). *r*. New Jersey (*Krider*). *s*. Pennsylvania (*Krider*). *t*, ♂. Henley Harbour, August 25th, 1860 (*Coues*). *u*. Bahia (*Wucherer*). *w*. Cayenne (*Jelski*). *x*, ♂, *y*, ♀. Chili, February 1872 (*Reed*).

## Genus HÆMATOPUS.

*Ostralega* apud Brisson, Orn. v. p. 38 (1760).
*Hæmatopus*, Linnæus, Syst. Nat. i. p. 257 (1766).
*Ostralegus* apud Macgillivray, Man. Brit. Orn. ii. p. 59 (1842).

The Oystercatchers inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, one species only being found in the Western Palæarctic Region. They, like the Turnstones, are inhabitants of the sea-coast, though they are occasionally seen on the shores of inland sheets of water. They are shy and wary; and at the least appearance of danger they fly off and circle round well out of range, uttering their loud alarm-note. They run swiftly or stalk unconcernedly about along the shore, picking up their food here and there. They feed on marine animals of various kinds, small shell-fish, snails, slugs, and worms; and they usually swallow small particles of gravel to assist in the digestion of their food. Their flight is swift and powerful; and the wings are frequently moved with a quick tremulous motion. Usually they do not fly at a great height and in wide circles; and their call-note, which is generally uttered when the bird is on the wing, is a clear, loud whistle. They breed on the sea-coast, their nest being a hollow in the gravel and stones just above high water-mark, sparingly lined with a few straws; and their eggs, four in number, are stone-buff, blotched and spotted with purplish grey and blackish brown.

*Hæmatopus ostralegus*, the type of the genus, has the bill long, bent upwards on the terminal half, about as high as broad at the base, peculiarly attenuated, wedge-shaped, tapering to a point when viewed vertically, and when viewed laterally contracted from the base nearly to the middle, then enlarged, and gradually sloping, but not forming a point; nasal groove extending beyond the centre of the bill; nostrils linear, subbasal; wings long, pointed, the first quill longest; tail rather short, nearly even; legs moderately long, stout; tibia bare for a short distance; tarsus covered with hexagonal scales; toes three in number, rather short, stout, with thick, broad margins, the outer and middle toes united at the base; claws small, slightly curved, obtuse.



J.G.Keulemans lith.

M & N Hanhart imp

OYSTER-CATCHER.

HÆMATOPUS OSTRALEGUS

# HÆMATOPUS OSTRALEGUS.

(OYSTERCATCHER.)

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*Ostralega, Pica marina vulgo dicta*, Briss. Orn. v. p. 38 (1760).
*Hæmatopus ostralegus*, Linn. Syst. Nat. i. p. 257 (1766).
*Scolopax pica*, Scop. Ann. i. Hist. Nat. p. 95 (1769).
*L'Huîtrier*, Buff. Hist. Nat. Ois. viii. p. 119 (1781).
*Haematopus hypoleuca*, Pall. Zoogr. Rosso-As. ii. p. 129 (1811).
*Ostralega pica* (Scop.), Vieill. Encycl. Méthod. i. p. 26 (1823).
*Haematopus capensis*, Licht. Verz. Doubl. p. 73 (1823).
*Ostralega europæa*, Less. Man. d'Orn. ii. p. 300 (1828).
*Haematopus balthicus*, C. L. Brehm, Vög. Deutschl. p. 562 (1831).
*Haematopus orientalis*, C. L. Brehm, Vög. Deutschl. p. 563 (1831).
*Ostralegus hæmatopus*, Macgill. Man. Brit. Orn. ii. p. 59 (1842).
*Hæmatopus macrorhynchus*, Blyth, Journ. As. Soc. Beng. xiv. p. 548 (1845).
*Hæmatopus longirostris*, Swinh. Ibis, 1863, p. 406, nec Vieill.
*Hæmatopus ostralegus* (L.), Blyth, Ibis, 1867, p. 166.
*Hæmatopus osculans*, Swinhoe, Proc. Zool. Soc. 1871, p. 405.

*Gille-Brideun*, Gaelic; *Huîtrier pie*, French; *Ostraceiro*, Portuguese; *Beccaccia di mare*, Italian; *Aisha-el-behar*, Moorish; *Austernfischer*, *Meerelster*, German; *Scholekster*, Dutch; *Strandskade*, Danish; *Tjaldur*, Icelandic; *Kjeld*, Norwegian; *Strandskata*, Swedish; *Pliiski*, Finnish; *Krivok-morskoi*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 929; Werner, Atlas, *Coureurs*, pl. 10; Kjærb. Orn. Dan. taf. 31; Fritsch, Vög. Eur. taf. 43. fig. 9; Naumann, Vög. Deutschl. taf. 181; Sundevall, Svensk. Fogl. pl. 36. fig. 5; Gould, B. of Eur. pl. 300; id. B. of G. Brit. iv. pl. 44; Schlegel, Vog. Nederl. pl. 219.

*Ad. ptil. æst.* capite, collo, dorso, tectricibus alarum minoribus et caudâ in parte apicali nigris: uropygio, supracaudalibus, maculâ parvâ sub oculis, corpore toto subtùs, subalaribus et axillaribus albis: remigibus nigris, latere interiore a basi albis: secundariis intimis et tectricibus majoribus albis: caudâ ad basin albâ: rostro aurantiaco, versus apicem flavido: pedibus rosaceo-carneis: iride rufo-fuscâ.

*Ad. ptil. hiem.* præcedenti similis sed maculâ semilunari in gulâ albâ.

*Juv.* adulto similis sed sordidior, maculâ in gulâ majore, pedibus pallidè carneo-griseis, rostro sordidiore; iride fuscâ.

*Adult Male in summer* (Bohuslän, Sweden, 11th April). Entire head, neck, and back deep glossy black; a small white spot under the eye; quills black, but the inner web is, except towards the tip, broadly

margined with white, and there is an elongated white spot on the centre of the terminal portion of the feather; larger wing-coverts and some of the inner secondaries white, forming a broad white patch across the wing, rest of the wing black; tail white on the basal, and black on the terminal portion; rump, upper tail-coverts, entire underparts, under wing-coverts, and axillaries pure white; bill orange-red at the base, becoming yellow towards the tip; iris rich reddish; edge of the eyelid orange-red; legs rich flesh-colour with a purplish rose tinge. Total length about 16 inches, culmen 2·85, wing 9·6, tail 4·4, tarsus 1·9.

*Adult Female* (Bohuslän, 8th April). Resembles the male.

*Adult in winter.* Differs from the summer plumage only in having a white patch on the throat; and the white spot under the eye is rather larger.

*Young in autumn dress.* Differs from the adult in having the black portions of the plumage duller in colour; and the white mark on the throat is much larger, and extended so as nearly to form a ring round the neck; bill and legs duller in coloration than in the adult.

*Young in down* (Bohuslän, 22nd June). Head, neck, and upper parts generally sooty greyish, the down tipped with dusty buff, and variegated, especially on the crown and back, with black; underparts below the throat white.

The Oystercatcher is found over almost the whole of the Palæarctic Region, ranging in winter tolerably far down the African coast; and in Asia it is also found as far south as Ceylon.

In Europe it is very generally distributed, but breeds in the northern districts, retiring southward during the cold season. With us in Great Britain it is found on almost all parts of the coast, but breeds chiefly in the northern districts. Mr. C. A. More states (Ibis, 1865, p. 432) that "in the south of England it is comparatively rare in summer; and though it breeds regularly in Cornwall and Devon, a few pairs only occur along the south coast; nor is it much more numerous on the eastern side of England." In Norfolk it used formerly, Mr. Stevenson says, to be abundant enough in the breeding-season on the northern shores of the county, but can now only be claimed as a resident through some few scattered pairs still lingering in one or two of the wildest and most retired of their former haunts.

In Scotland it breeds in suitable localities on most parts of the coast, and sometimes tolerably far inland. In Sutherlandshire it is, Mr. Harvie Brown says, very numerous. On the west coast it never comes inland to breed, but frequents all the sea-lochs, and especially the Badcall Islands. It breeds on Loch Shin, and also in the north. According to Dr. Saxby it is merely a summer visitant to Shetland, arriving in March and leaving again in September.

In Ireland it is, Thompson writes, common round the coast, and permanently resident.

It only visits Greenland as an occasional and rare visitant. Professor Reinhardt says (Ibis, 1861, p. 9) that he has seen three specimens from there—one sent in 1847 from Julianeshaab, another in 1851 from Godthaab, both being in the Copenhagen Museum, and he saw a third in a collection of bird-skins sent from Nenortalik. In Iceland it is, Professor Newton says, "more common in the south than in the north. Faber considered it to be resident throughout the year; for it remains in large flocks during the winter in the south. It is, of course, most abundant on the sea-coast; but Herr Preyer met with it on some of the inland waters."

Captain Feilden says that it is common on the Færoes, where it breeds everywhere in suitable localities. In Scandinavia it is very generally distributed during the breeding-season, and is met with up into Lapland. Mr. Robert Collett informs me that in Norway it occurs probably on every island along the entire line of coast, and was seen at Stappen, close to the North Cape, in June 1872. On the south coast of Norway some few individuals remain regularly over winter. Nilsson states that it is common on the coasts of Sweden, from the extreme south up to the north of the Gulf of Bothnia, and not unfrequently visits the lakes far from the sea. He has seen it during the summer on the shores of the Wenern and Wettern; and it is occasionally seen on the Ringsjö, in Skåne. It arrives in Southern Sweden in March, and leaves in September, some few remaining till early in October. In Finland it is common all along the coast. I have seen it almost everywhere from Torneå down to Wiborg, and found numbers breeding in Northern Finland. According to Dr. Palmén it is found also sparingly in the interior, but is not known to breed there. It has been observed in Jockas, at Haminanlaks, near Kuopio, and in Pudasjärvi. One was shot near Muonioniska in 1866; it has several times occurred during the summer in Enare, and in Utsjoki in August. It arrives in Southern Finland late in April, and leaves in September. In Russia it is common on the shores of the White Sea and the coasts of the Archangel Government. Messrs. Seebohm and Harvie-Brown state (Ibis, 1876, p. 290) that they first saw the present species at Ust Zylma on the 26th May, and obtained eggs on the 8th June. Afterwards they met with them in small numbers up to about twenty miles within the Arctic circle; but they did not find them on the islands of the delta, or on the shores of the mainland north of that point. Mr. Sabanäeff informs me that it breeds not unfrequently in the Governments of Jaroslaf, Tver, and Kostroma, and is found but rarely during summer in the Smolensk Government. In Poland it is, Mr. Taczanowski states, of very rare occurrence; and it is by no means a common bird in North Germany or in the Baltic provinces. Mr. H. Schalow says (J. f. O. 1876, p. 23) that it is very rare on passage in Mark Brandenburg. It is said to have been observed in Oderbruch; a specimen was obtained at Neustadt/Esw; and there is one in the agricultural museum from the Nauener district. In the autumn of 1875 Dr. Bolle watched a small flock during several days on the Tegeler lake. Mr. Collin says that it usually arrives in Denmark late in March or early in April, occasionally somewhat earlier, and leaves in September, but a few remain over winter on the shores of Holstein. It breeds on most of the small islands, especially those on the west coast of Schleswig, and to some extent on the coasts of Denmark. On Amrom, he adds, the natives put Hen's eggs in its nest, and it hatches them out. On the south coasts of the North Sea it is resident. According to Professor Schlegel it breeds on the coast of Holland, usually arriving there in April and leaving in September, but it also winters there in larger or smaller numbers. In Belgium it is common, and is found numerously on the coasts of Flanders in the winter and spring, occurring at times along the Meuse and some distance up the Rhine. On the north and west coasts of France it is abundant, and is found in moderate numbers in the Lower Camargue, where it breeds on the same islands as the Terns and Avocets. M. Adrien Lacroix states that it is found on passage, and is to some extent resident, on the coasts of Aude and Hérault, and is found in spring and autumn, and perhaps, to a small extent, in the summer, in the Pyrénées Orientales. In Portugal it is common; and Mr. Howard Saunders states (Ibis, 1871, p. 387) that it is not unfrequently found on the coast of Spain in winter; but

according to Colonel Irby (Orn. Str. Gibr. p. 164) it is not at all numerous on the Spanish side of the Straits of Gibraltar, where it appears irregularly from autumn to spring, the latest recorded specimen having been seen by Lord Lilford near the mouth of the Guadalquivir on the 5th of May.

Passing eastward I find the present species recorded as being of very accidental occurrence in Savoy; and Count Salvadori says that it is somewhat rare in Italy, where it is met with chiefly in winter and spring. Formerly it appears to have been commoner than it now is; but a few pairs are believed still to breed in suitable localities. In Sicily it is not uncommon in the low portions of the country on the eastern and southern coasts; but about Palermo it is but little known. According to Mr. C. A. Wright (Ibis, 1864, p. 141) it is only an accidental visitor to Malta, where it has been observed in April, August, September, October, and November. Lord Lilford states that it is common on the shores of Corfu and Epirus for a few weeks in March and April; but, according to Dr. Krüper, it is but seldom seen in Greece. In Southern Germany it is only known as an accidental straggler. Dr. Anton Fritsch states (J. f. O. 1871, p. 385) that it has on several occasions been obtained in Bohemia. One shot many years previously near Frauenberg is in the collection of Colonel Feldegg; and since then only one has been seen there, in the Tritener district. Mr. Hromadko possesses a male which was shot on the Ceperka pond, near Pardubic, in 1847; and Dr. Fritsch himself obtained an immature bird in the Prague market on the 24th September, 1850, and adds that Mr. Voboril received his specimen from Elbekostelec. Messrs. Danford and Harvie-Brown say (Ibis, 1875, p. 420) that it is rare in Transylvania, but is sometimes met with during the spring passage. Herr Buda Elek shot one, and saw others at Russ, in the Strell valley They were also told by Count Bánffy Béla that he had seen a small flock at Szent Mihály during May 1875.

On the coasts of the Black Sea the Oystercatcher is, Professor von Nordmann states, generally distributed; but it does not appear to winter on the north shore. Gonzenbach records it from Asia Minor; but Canon Tristram does not appear to have met with it in Palestine. In Africa its range is tolerably extensive. Von Heuglin says that he met with it singly on the North-African coast in winter, and believes it to be a resident on the Red Sea; for he met with large flocks in May in the Gulf of Suez, pairs and families all through the summer at Qoseier, Sauakin, in the Dahlak archipelago, at Amfila and Belul, and in November and December along the Somali coast near Zela and Berbera. On the east coast of Africa it is, according to Peters, found at least as far as Mozambique, but does not range down to the Cape of Good Hope. In North-west Africa it is found in winter in Algeria; Von Heuglin received it from Tripoli; and Favier states that it is found near Tangier, on passage, in April and May and again in October. He says that it sometimes remains to breed; but this is doubtful; for Colonel Irby remarks (*l. c.*) that all eggs sent by Favier as Oystercatcher's were really those of the Stone-Curlew. On the west coast it has been met with as far as Senegambia, whence there is a specimen in the Leyden Museum; but I do not find any record of its occurrence further south.

In Asia it is found right across the continent to Japan. Dr. Severtzoff states that it breeds rarely in Turkestan; and Mr. Blanford says that it is occasionally seen along the coasts of the Persian Gulf and Baluchistan. In India, according to Dr. Jerdon (B. of Ind. ii. p. 660), it is "found both on the east and west coasts, most abundant perhaps on the more rocky west coast,

and is only a winter visitant." It is, he adds, very shy and difficult to procure; but he found it far from rare near Tellicherry, where he lived some time. Southward it is found in Ceylon, where Layard saw one or two near Jaffna.

In Siberia it does not appear to range as far north as in Europe. Von Middendorff saw it on the 7th August (O. S.) on the great Schantar Island; and Von Schrenck received an old female, shot by Mr. Maack, on the 8th July, near the mouth of the Ussuri; and he himself killed a young bird near the village of Kalta, close above where the Amoor cuts through the Bureja Mountains, fully eighty-five geographical miles from the nearest sea-coast. Pallas records it from the Kurile Islands; and Mr. Swinhoe, who met with it in China, says that he has reason to believe that it breeds in Talien Bay, in North China, as he so frequently saw it there in the month of June. It is believed to inhabit Japan, as it is seen in native drawings.

The Indian and Chinese bird, which is specifically identical with ours, has, as a rule, a longer bill; but the variation in the length of the bill of specimens from the same locality is frequently considerable, and clearly shows that it is no characteristic difference. There is, however, another somewhat closely allied, but quite distinct, species found in Australia and New Zealand (*Hæmatopus longirostris*, Gm.), which differs chiefly in having the under wing-coverts and axillaries black and white, and the black on the throat extending far onto the breast.

The Oystercatcher is chiefly found on the sea-coast, though not unfrequently a few individuals are seen far inland, especially during the summer season. As a rule, it frequents the low rocky shores or the mouths of rivers, where it has a good chance of foraging for food; and on large tracts of sandy shore it seems to remain rather for security than in order to search for food. I have frequently seen it on the low shores of the Baltic, especially the stony portions of the Gulf of Bothnia, where numbers breed, and where, when collecting, I found it an intolerable nuisance; for, owing to its wary and shy habits, it frequently used to give the alarm to birds I was stalking. It is almost impossible to walk up to within gunshot-range of it; for however unconcerned it may appear, directly one gets too near, it starts off, flying round well out of range, and uttering its loud alarm-note. I have generally seen it singly or in small parties; but it is said to collect not unfrequently in considerable flocks. It usually frequents the edge of the water, into which it often wades; and in places where i tis necessary to do so in order to obtain food, it does not hesitate to swim, which it does with ease. It feeds on marine animals of various sorts, small shellfish, *Patellæ*, young crabs, &c.; and it is stated to be very fond of the shore-worm (*Arenicola lumbricoides*), and eats ordinary worms, snails, and slugs. So far as I can ascertain, it seldom eats oysters or large bivalves; its common name is therefore somewhat inappropriate. Macgillivray says that limpets and *Balani* form its chief food, and that the bivalves found in its gizzard or œsophagus are generally, when of small size, either entire or merely crushed, but when large are deprived, in a greater or less degree, of their testaceous envelopes. Along with their food they swallow particles of gravel, frequently of considerable size. It runs with great celerity on the hard sand, and walks with ease in the soft muddy places. Its flight is swift and powerful, the wings being extended far and flapped quickly, not unfrequently with a tremulous motion, and, as it settles down, held stiff like those of a Duck. Usually it does not fly at a great height, and not unfrequently flies in large circles. Its call-note is a clear loud whistle, resembling the syllables *kweep kweep*, and is uttered both when the

bird is sitting and on the wing; and when alarmed this note is uttered frequently in succession, loudly and quickly, and is sometimes considerably modulated.

Mr. Robert Gray, writing on the habits of the Oystercatcher in Scotland, says (B. of W. of Scotl. p. 268):—"The Oystercatcher pairs early in the season, and in some parts of Scotland is known to travel long distances inland. When travelling from Perth to Inverness in April 1870, I observed several pairs on the banks of the Tay evidently mated. Near Dalguise I saw others frequenting a ploughed field at some distance from the river; and at Ballinluig two or three pairs were observed near a farm-steading feeding not more than twenty yards from the pigeons and poultry. On reaching Pitlochry I found five or six pairs, all apparently mated; and, finally, as we passed Blair Athole and proceeded northward towards Struan, I counted about a dozen more, showing that these birds follow the windings of such a river as the Tay, and take up their summer quarters on its banks at the commencement of the breeding-season. About a week afterwards, while travelling along the side of the Spey from Rothes to Abernethy, I took notice of the fact that pairs of this bird were located in the same way on the banks of the river from the Moray Firth to the confines of Inverness-shire, where they would almost meet those coming from the Firth of Tay. In like manner these birds ascend the Findhorn as far as its source in the Monahliadh Mountains, and also penetrate to Lochness and Loch Oich, where they are met by others which have entered by the south at Loch Linnhe. The same remark applies to the whole of the western coasts, where the many streams and sea-lochs that characterize that side of Scotland attract the Oystercatcher and other birds of like habits, and lead them gradually inland, so that during the breeding-season they turn up before the tourist almost everywhere. I recollect seeing about thirty in a flock pitch upon a shelving rock, from which the waves had just receded, and commence an attack upon the limpets, which were very numerous. Being within three or four yards of them, I could distinctly perceive their movements, and could not help being struck with their dexterity in overturning the shells and scooping out their contents. Sometimes a bird would run forward to a limpet and bend down its head sideways, as if in a listening attitude; then it passed to another and another, repeating the scrutiny, apparently to see if the shell was at all raised from the rock, until it found one ready for treatment, which it immediately put in force by thrusting its thin pointed bill suddenly between the edge of the limpet and its point of attachment, and turning it neatly over. One foot was then placed on the object and the animal taken out as cleanly as if done with a knife or other sharp instrument. Another favourite feeding-ground is some sheltered bay, where a pair or two will often station themselves for a few hours, boring the wet sand for annelids, which I have seen them pull out of their burrows, and carry to the water for a slight rinsing before being swallowed."

Thompson, referring to the food of the Oystercatcher, as observed by him in Ireland, says, "a very favourite haunt in the bay is a very extensive mussel-bank, near Garmoyle, from being commonly seen feeding on which these birds have received the name of Mussel-peckers, which, here at least, is much more appropriate than Oystercatcher, as the *Ostrea* inhabits too deep water to be ever accessible to them. The contents of the stomachs or gizzards (which latter are as fully developed as in the graminivorous birds) of eight Sea-pies, shot in various parts of the bay in spring, autumn, and winter, proved, on examination, to be as follows: five contained only the opercula and portions of the animal of the whelk (*Littorina communis*), with which

some of them were wholly filled; one exhibited merely the opercula, about forty in number, of *Purpura lapillus*, and of all sizes, from the smallest to the full-grown; another (shot on Nov. 13) presented a great deal of vegetable matter, consisting of tender roots and green leaves, also small white worm-like larvæ, a few opercula of the whelk, and an operculum of the buckie (*Buccinum undatum*); in the crop and stomach of the last, which was remarkably fat, were found fifty opercula of large whelks, about twenty-five animals of well-sized limpets (*Patella vulgaris*), in addition to which was a Holothuria (*Cucumaria*). In others, not particularly noted down, I have found the flesh of the mussel; but univalve shell-fish, and more particularly the whelk, are certainly their chief food in Belfast Bay. In no instance have I found any particles of shell, which affords the negative evidence that the animals are all extracted from their habitations by the bird, whose peculiarly formed hill is admirably suited to such a purpose, *i. e.* for 'picking wilks!' On the same bank with the mussels (*Mytilus edulis*), univalves are also found. Wilson, in his very interesting account of the nearly allied *Hæmatopus palliatus* (the representative of our species on the shores of the United States), mentions his having remarked numerous borings made by the bill of the bird in the sand. Remembering this, I on one occasion, after observing several Oystercatchers feeding for some time on the sands at Ballyholme Bay, went to the spot to examine if any excavations of the kind were visible; but none appeared. A few of the fresh double valves of *Venus virginea* were lying about; and it was believed that the birds had been preying on the once contained animals, as these had disappeared."

The nest of the Oystercatcher is usually a mere hollow amongst the gravel or stones just above highwater mark; or sometimes a few straws or pieces of plants are collected together to form a scanty bed for the eggs, which are generally three, sometimes four, in number, oval in form, somewhat pointed towards the smaller end. In colour they are stone-buff marked with underlying purplish-grey shell-markings and blackish or blackish-brown surface-spots. Some eggs are more marked than others; and in some the surface-markings are contorted, whereas in others they are mere spots of colour. In size a series of eggs in my collection vary from $2\frac{7}{40}$ by $1\frac{19}{40}$ inch to $2\frac{16}{40}$ by $1\frac{23}{40}$ inch.

The eggs are usually deposited from the middle of April to the last week in May; and only one brood is reared in the season.

Mr. Collett cites a rather curious instance of the nesting of this bird in Norway; for he says that Mr. Schübeler found a nest in the cavity on the top of a felled pine tree on Inderöen, near the Trondhjems fiord, in June 1872.

The specimens figured are the adult bird in full summer dress and the young in down above described, the latter being about eight or ten days old.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Aboyne, Scotland, April 27th, 1872 (*J. Waters*). *c*, ♀. Bohuslän, Sweden, April 8th, 1875 (*Meves*). *d*, ♂. Bohuslän, Sweden, April 11th, 1875 (*Meves*). *e*, *pull.* Bohuslän, June 22nd, 1875. *f*, *pull.* Skåne, Sweden, July (*Meves*). *g*, ♀. Archangel, June 23rd, 1874 (*Piottuch*).

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*E Mus. J. E. Harting.*

*a*, ♀. Nairn, Moray Firth, May 1868 (*W. Swindell*). *b*, ♂. Orkney, summer (*Dunn*). *c*, ♀. Orkney, winter (*Dunn*). *d*, ♀. Beadnell, Northumberland, May 1863 (*J. E. H.*). *e*, ♀. Yarmouth, September 25th, 1868 (*Gunn*). *f*. Poole Harbour, Dorset, March 14th, 1873. *g*, ♂. Pagham, September 20th, 1869 (*J. E. H.*). *h*. Christchurch, Hants, October 3rd, 1872 (*Baron von Hügel*). *i*. Poole Harbour, March 14th, 1873 (*Baron von Hügel*). *k*, ♀. Instow, N. Devon, September 23rd, 1870 (*J. E. H.*). *l*, *pull.* Walney Island, Lancashire.

## Family SCOLOPACIDÆ.

### Genus RECURVIROSTRA.

*Avocetta* apud Brisson, Orn. vi. p. 538 (1760).
*Recurvirostra*, Linnæus, Syst. Nat. i. p. 256 (1766).

This genus is distributed in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, one species only being found in the Western Palæarctic Region. They resemble some of the Sandpipers in their habits, though in their manner of flight they have more affinity with the Stilt-Plovers. They frequent the shores of lagoons, mud-flats on the coast, and places where there are shallows, where they can obtain their food by wading; for they frequently wade up to their bellies in the water, and will swim when they get out of their depth. They walk and swim with ease, and are usually to be seen moving quietly about the shores in search of their food, which consists of minute aquatic insects, which they scoop up in shallow water, moving their bills as a mower does his scythe. Their flight is tolerably strong, but somewhat heavy and slow, with their long legs stretched out behind, looking like long tail-feathers. They are, as a rule, gregarious, collecting together in larger or smaller flocks; and even during the breeding-season several pairs dwell near together. Their note is clear and flute-like, and is generally uttered when the bird is on the wing. Their nest is a mere hole scratched in the ground, and lined with a few grass-straws and roots; and their eggs, three or four in number, are warm stone-ochreous spotted and blotched with blackish.

*Recurvirostra avocetta*, the type of the genus, has the bill long (more than twice the length of the head), very slender, broader than high at the base, tapering gradually to a point, and considerably recurved on the terminal portion; nasal groove extending over about one third of the length of the bill; nostrils basal, linear; wings long, narrow, pointed, the first quill longest; tail short, nearly even; legs very long and slender, the tibia bare for nearly half its length; tarsus long, compressed, covered with hexagonal scales; hind toe very small, anterior toes moderately long, connected by deeply emarginate webs, which do not extend to the end of the toes; claws small, slender, very slightly curved, obtuse, that on the middle toe larger, and with the inner edge slightly dilated.



J. G. Keulemans del.

Mintern Bros. imp

AVOCET.

RECURVIROSTRA AVOCETTA.

# RECURVIROSTRA AVOCETTA.

(AVOCET.)



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*Avocetta*, Brisson, Orn. vi. p. 538, pl. 48. fig. 2 (1760).
*Recurvirostra avocetta*, Linn. Syst. Nat. i. p. 256 (1766).
*Scolopax avosetta* (L.), Scop. Ann. I. Hist. Nat. p. 92 (1769).
*L'Avocette*, Buff. Hist. Nat. Ois. viii. p. 466, pl. 38 (1781).
*Recurvirostra europæa*, Dumont, Dict. Sc. Nat. iii. p. 339 (1816).
*Recurvirostra fissipes*, C. L. Brehm, Vög. Deutschl. p. 686 (1831).
*Recurvirostra helebi*, A. E. Brehm, J. für Orn. 1854, p. 84.
*Recurvirostra helevi*, C. L. Brehm, Vogelfang, p. 326 (1855).
*Recurvirostra sinensis*, Swinhoe, Ibis, 1867, p. 401.

*Avocette à nuque noire*, French; *Alfayate*, *Frade*, Portuguese; *Avoceta*, *Boceta*, Spanish; *Avocetta*, Italian; *Scifa*, Maltese; *Bou-mehet*, Moorish; *Avosett-Säbler*, *Säbelschnäbler*, German; *Kluit*, Dutch; *Brogeblit*, *Klyde*, Danish; *Klyde*, Norwegian; *Skärfläcka*, Swedish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 353; Werner, Atlas, *Gralles*, pl. 3; Kjærb. Orn. Dan. taf. 33; Fritsch, Vög. Eur. taf. 34. fig. 7; Naumann, Vög. Deutschl. taf. 204; Sundevall, Svensk. Fogl. pl. 38. fig. 1; Gould, B. of Eur. pl. 368; id. B. of G. B. iv. pl. 53; Schlegel, Vog. Nederl. pl. 250; Bechst. Orn. Taschenb. pl. 29.

*Ad.* albus: pileo, capitis lateribus usque ad oculos, nuchâ et collo postico, scapularibus intimis, tectricibus alarum (intimis exceptis) et remigibus primariis nigris: rostro nigro: iride rufescenti-brunneâ: pedibus pallidè cæruleis.

*Juv.* adulto similis, sed partibus nigris in corpore suprà brunneo adumbratis, et partibus albis vix ochraceo tinctis.

*Adult Male* (S. Spain, June). Crown, sides of the head to below the eye, nape, and hind neck deep sooty black; rest of the neck, back, rump, tail, and entire underparts pure white; primaries black, secondaries and primary-coverts white, some of the innermost secondaries deep blackish brown; wing-coverts (except those at the base of the wing) black; outer scapulars and the coverts at the base of the wing white, inner scapulars black, slightly varied with white; beak black; iris rich reddish brown; legs light blue. Total length about 18 inches, culmen 4·0, wing 8·5, tail 3·45, tarsus 3·65.

*Adult Female* (Boel, Jutland). Differs from the male merely in having a rather shorter tarsus, that of the specimen before me measuring only 3·2 inches.

*Nestling* (Denmark, 1872). Covered with short, rather dull white down; crown and nape tinged with

grey, the former slightly variegated with sooty blackish brown; upper parts otherwise variegated with dark brownish grey and tinged with grey.

*Obs.* The winter plumage does not differ from that worn in the summer; but the young birds before they attain the fully adult dress have the black on the upper parts tinged with brown, and the white portions of the plumage are duller and yellowish.

The present species inhabits Central and Southern Europe, ranging further north only as a straggler, though it breeds as far north as Denmark. In Africa it is met with down to the Cape of Good Hope, and in Asia as far east as China; but it is not found in the Nearctic Region, where it is replaced by *R. americana*.

In Great Britain it is now only known as a rare straggler, though half a century ago it bred in the marshes of Norfolk. It has been recorded from several places on the south and east coasts, but becomes very rare towards the north. Yarrell says that "one or two have been killed in Cornwall, and they were noticed formerly in Gloucestershire and in Shropshire; four are recorded as having been obtained in Devonshire." It has also been obtained in Dorsetshire. Mr. J. C. Mansel-Pleydell says that "one was shot by Captain Pretor in October 1867, near the ferry bridge which joins the Chesil bank with the mainland; and in the following month another was killed on Lodmoor, and is in Mr. Thompson's possession." One was killed in 1837; and the last known to Mr. Mansel-Pleydell as having been killed in Dorsetshire, was killed at Poole in 1869. It used to breed in Sussex, but has not done so for long, being only seen now and then; and its breeding-haunts in Romney Marsh, Kent, have been for many years deserted. Formerly it also bred in considerable numbers on our east coast; but, owing partly to the drainage of the fens, and still more to the ruthless persecution to which it has been subjected, it has now become exterminated. Mr. Stevenson states (B. of Norf. ii. p. 240) that he has conversed with an octogenarian marshman who remembered the present species breeding in the marshes near Salthouse by hundreds, and used constantly to gather their eggs; but, according to the same authority, they were last known to breed there between 1822 and 1825, though stragglers from time to time visited their old haunt during passage until 1851, when the marshes were altogether reclaimed. During the last thirty years the Avocet has been only known in Norfolk as a very rare straggler, but one or two examples have been obtained almost every season. Mr. Stevenson writes to me that "the few specimens which are now obtained appear chiefly in May on Breydon flats, near Yarmouth, or in the estuary at Lynn. It has been very scarce during the last six or eight years." It formerly used to breed in Lincolnshire; and, according to Mr. A. G. More (Ibis, 1865, p. 436), the late Mr. H. Reid, of Doncaster, obtained eggs from the mouth of the Humber as late as about thirty years ago, which appears to be the last instance of its having been found breeding here. In Camden's 'Britannia,' 1806 (*fide* Southwell, Trans. Norf. & Norw. Nat. Soc. 1870–71, p. 15), it is stated that "opposite Foss-dyke Wash, during summer, are vast numbers of Avosettas, called there Yelpers, from their cry as they hover over the sportsman's head like Lapwings."

In the north of England it is very rare; but according to Selby it has occurred at Hartley, in Durham; and though it has been met with in Scotland, it must be looked on as an extremely rare species. Mr. Robert Gray, who states that it is not found on the west coast of Scotland,

writes as follows:—"I have been informed by Professor Dickie, of Aberdeen, that a specimen was shot on the Old Links near that city in 1841 by Mr. Mitchell, who presented the bird to the late Dr. Fleming. Of late years the only specimen that has occurred to my knowledge is one that was shot on the sands of Kirkcaldy, in Fifeshire, by Mr. John Wilson, of that town, in the second week of August 1862." Dr. Edmonston mentions that it has been met with in Orkney; and Dr. Saxby saw one at Uyea Sound, in Shetland, in March 1871.

In Ireland, as in Scotland, it is an extremely rare straggler; and it has not been met with in the Færoes, though it is found in Scandinavia. As regards Norway, Mr. Collett informs me that it "occurs very sparingly in the southern portions of the country, but has not been known to remain there to breed. One was shot at Fredrickstad in 1840, and one at Christiania in 1843. It has also been met with in the interior, and one was shot on Hedemarken, near Mjösen, in 1846." In Sweden, Nilsson states, it is seldom met with further north than Gottland, Öland, and Skåne. It is rare on the coasts of the last-named province, and is most frequently met with on the southern point and east shore of Öland. It has been seen and obtained at Lomma, Malmö, and Trelleborg; and one was shot at Barsebäck, in May 1835. Its occurrence in Finland rests on but slender evidence. Dr. Palmén says that, according to Bergstrand, it is said to occur in Lemland, the southermost parish on the island of Åland; and according to Professor Nordmann a bird was seen on the coast of Nyland which could not well be any thing but an Avocet. On the southern shores of the Baltic it used formerly to breed; but Borggreve says that it is now almost extinct as a breeding species, and only occurs as a straggler. It still, however, remains for the purpose of nidification on the coasts of Denmark. Kjærbölling writes that it arrives in April and leaves in August, and breeds in several localities, chiefly on the islands, and always near the coast; and Mr. Fischer says that a small colony bred on a small island in the Liimfiord, not far from Oxholm. In Holland, Mr. H. M. Labouchere informs me, the Avocet still breeds in marshy places along the sea-coast, but is only met with in certain localities. It arrives in April, and leaves again in September. Baron von Droste Hülshoff also mentions (Vogelw. Borkums, p. 169) that it breeds sparingly on the island of Borkum. In the interior of Germany it is seen but rarely. Naumann states that, with the exception of the large lakes of Hungary, it is everywhere a great rarity, and only occurs as a rare straggler. A few have been obtained in the interior of Germany on the Oder, the Danube, the Boden Lake, the Rhine, and the salt lake at Eisleben; and I may add that Dr. Rey mentions that it has been obtained at the Mansfeld Lake.

It occurs in small numbers on the coast of Belgium and on the marshes of Flanders at the two seasons of migration, and occasionally visits the interior along the Meuse and the Moselle. In the north of France it is principally seen on passage; but in many parts of the south it breeds and is resident, especially on the great lagoons of Languedoc and Roussillon, and in the lower Camargue. Professor Barboza du Bocage speaks of it as being common in Portugal; and it is found in Spain, but would appear to be somewhat local, and not very numerous. Colonel Irby states (Orn. Str. Gibr. p. 164) that he did not personally meet with it; but "a few pairs nest in some parts of the marismas during the month of May, and specimens of both eggs and birds are occasionally brought into Seville; but it cannot be, unless very local, a common bird." Mr. Howard Saunders writes to me as follows:—"This bird is generally distributed in suitable

localities not far from the sea-coast, and I have received specimens from the Valencia, Malaga, and Seville districts; but personally only three or four pairs have come under my notice. It breeds far down in the Coto de Doñana, and near San Lucar de Barrameda, whence I have eggs." I am also indebted to Lord Lilford for the following note, viz.:—"The Avocet is not uncommon in the marisma of the Guadalquivir in April and May, and breeds sparingly in that locality, laying its eggs on the bare hard mud or shingle. Very clamorous, and justly deserving the name, formerly given to it by the fenmen, of 'Yelpers.'"

Passing eastward, again, I find it recorded as of very rare occurrence in Savoy in spring, and in one instance a specimen has been obtained in the autumn. In Italy it is somewhat rare in the northern and central provinces, but there is little doubt that it nests, or used to nest, near Venice. In the island of Sardinia it is more common; and Salvadori cites the marshes of Cagliari and Oristano for it; but Doderlein finds it a rare bird in most parts of Sicily, although he believes a few breed about Lentini and Syracuse. In Malta, Mr. C. A. Wright states (Ibis, 1864, p. 149), it is "very rare. When seen it has generally been in April and May. There are two specimens in the University Museum, which were shot many years ago. I have a specimen, a female, shot at the Salini, out of a party of three, on the 7th November, 1860. One of the two others, a fine male, was afterwards killed at the same place, and another in the spring of 1862."

Dr. Krüper says that it occurs as a straggler in Greece during passage, but that it is uncertain if it remains there over the winter. Von der Mühle, however, states that it is found in winter during the most severe weather. It is certainly found on the Greek islands in winter; for Lord Lilford states (Ibis, 1860, p. 345) that he was shown one in December 1856, which had been killed a few days previously at Butrinto, and he once or twice heard of others, but did not himself ever see one alive there. In Southern Germany it is now and then met with; and Dr. A. Fritsch states that it has been killed in Bohemia, at Frauenberg, as well as at Pardubic. Messrs. Danford and Harvie-Brown state (Ibis, 1875, p. 420) that it is rare in Transylvania. "Herr Buda says it has occurred; and Bieltz mentions two, one of which was shot at Reussbach, near Hermannstadt, in 1835, and the other he saw in the market in 1846." I did not see it when on the Lower Danube; but Dr. Cullen says that it is not uncommon near Kustendji, where it breeds.

In Southern Russia it is extremely common on the borders of the salt lakes; and it must breed in tolerable numbers on the Lower Volga, judging from the numbers of specimens of the bird and its eggs sent from there. In Asia Minor it is found during passage, or in winter, and was met with by Canon Tristram in Palestine, where it is a scarce resident, and by Mr. J. K. Lord on the Sinaitic peninsula. In North-east Africa it is tolerably common, and is very generally distributed throughout that continent; Von Heuglin, who says that he believes it breeds in the delta of the Nile, as he observed it there in May, adds that it is seen in small flocks of from six to fifteen individuals, most frequently in August, along the Nile in Egypt, Nubia, and Kordofan, and remains over the winter; and the information published by Captain Shelley and others respecting the occurrence of this species in North-east Africa, tallies with what Von Heuglin states, except as regards its occurrence in May. Loche states that it is not numerous in Algeria, but that it is generally distributed in suitable localities. Canon Tristram observed a

few at Tuggurt in January; and Mr. Salvin writes (Ibis, 1859, p. 359) as follows:—"We only saw the Avocet at Zana and Djendeli, though we did not until afterwards recognize the birds seen at the latter place as belonging to this species, which they undoubtedly did. At Chot Sahoun, the eastern extremity of the marsh of Zana, the bird was most numerous." According to Colonel Irby (*l. c.*), Favier says that the present species is "not common in the vicinity of Tangier, being only met with on passage, on the edges of rivers and lakes, in small flights, which pass northward during March, April, and May, and return south in November." It occurs here and there on the west coast, and is met with as far south as the Cape colony. Tuckey records it from the Congo; and Mr. Andersson says (B. of Damara Land, p. 314) that it is "occasionally found on the south-west coast of Africa, and also occurs, though less frequently, inland. In the Cape colony, however, I found the case, as regards its distribution, slightly reversed. I may mention as inland localities for this species Objimbique, where I have seen it once or twice, and Ondonga, where it was shot by Axel. At certain seasons the Avocet is not uncommon on the coast at Walvisch Bay, Sandwich Harbour, Angra, Pequeña, &c.; but it usually disappears from Damara Land during the breeding-season, though I have little doubt that a few pairs remain to nest there, as I have occasionally met with very young birds during the dry time of the year." Mr. E. L. Layard, writing on its occurrence in the Cape colony (B. of S. Afr. p. 328), says that it "occurs periodically in the colony in small flocks. It does not appear to be very shy, as many have been yearly procured on Zeekoe Vley, on the Simon's-Town and Wynberg road, among them several specimens in very young plumage." Since this was written, however, as pointed out by Mr. J. E. Harting (Ibis, 1874, p. 250), the Avocet has been found breeding in the Cape colony, and Mr. Harting has obtained its eggs through Mr. Layard. On the east side of the continent it is recorded by Dr. J. Kirk as not unfrequent in damp localities, near marshes, on the Zambesi; and Dr. Hartlaub states that it has occurred in Madagascar.

To the eastward, Mr. Blanford records the present species from Persia, but says that he only saw it at Shiráz Lake, where several pairs were apparently breeding. Mr. A. O. Hume, who met with it in Sindh, states (Stray Feathers, i. p. 248) that it was "very common about the larger inland lakes; at the Muncher lake especially" he "noticed it in large parties, certainly a hundred in a single flock." Dr. Jerdon writes (B. of India, ii. p. 706) that it is "not a very common bird in India, but is met with occasionally throughout the whole country, frequenting the edges of tanks and rivers, generally in small flocks." Colonel Tickell, however, speaks of it as being an exceedingly rare bird, and says that he never met with it except in the tideway of the Hoogly below Calcutta, or in the mouths of the Roopnarain, near the sea, which statement, however, scarcely agrees with what Mr. Hume and others write; for Captain J. Hayes Lloyd states (Ibis, 1873, p. 417) that it is "very abundant on the Null (Kattiawar) and other sheets of water." Mr. R. Adam, who met with it on the Sambhur lake, states, however (Stray Feathers, i. p. 397), that it is rare there; during the last rains he obtained four specimens from the Sambhur side, and one from the Nawa Goodha side of the lake. It has been met with as far south as Ceylon, where Mr. E. L. Layard records two instances of its occurrence near Jaffna.

According to Dr. Severtzoff it breeds in Turkestan; and it is also met with in Siberia. Dr. G. Radde states (Reis. im Süd. von Ost-Sib. ii. p. 326) that he can from personal observation

confirm Pallas's statement that it frequents the salt lakes and steppes of Dauria. He first observed it in small flocks at the Tarei-nor on the 28th April, 1856; and soon after, they separated in pairs. On the 24th May several eggs were found. Mr. Swinhoe says that it visits the China coast in winter; and, according to Père David, it is found in May at Ordo, near the Yellow River.

In habits, as well as in appearance, the Avocet closely resembles the true Sandpiper, and in its general mode of moving about along the shore it reminds one of the Greenshank; but on the wing it differs materially in appearance from any of the true Sandpipers, and resembles more the Stilt, though it differs not a little from that species also. The wings are extended rather far, arched, the centre being the highest portion; and the bird propels itself either by quick flaps or by slow measured ones, according as it is hurried or not. When undisturbed, and flitting about at its nesting-haunts, it flies, at no great height, slowly and somewhat heavily, its long legs stretched out behlnd, and its long neck drawn in, and the head slightly depressed. It is a shy, wary bird, careful to permit no one to approach it, and well aware of the danger involved in the close proximity of man; therefore it is by no means easy to watch its movements, even with a field-glass. I have, however, had very ample opportunities of watching its ally, *Recurvirostra americana*, which closely resembles it in habits. When at Matamoras, in Mexico, about ten years ago, I found the Avocets, which frequented a lagoon close to the town, so tame, from never having been molested, that I could, by lying on the ground and creeping quietly towards them, approach within a dozen paces; and with a field-glass I could then watch every movement. They were feeding on small aquatic insects, which they scooped up in shallow water; and the mode in which they did this was most peculiar. A flock of, say, ten or a dozen would commence operations in a diagonal line, one rather before the other, exactly like mowers in a field; and they moved slowly onwards, scooping sideways in the water with their recurved bills in regular order, reminding one most forcibly of a gang of mowers in a large field. I have several times examined the stomachs of Avocets I have obtained, and never found any thing in them but a mass of stuff mixed up with tiny stones, and could never exactly make out of what it consisted, though it appeared, so far as I could ascertain, to be the remains of minute insects pounded up into an undistinguishable pulp. So far as I know, the Avocet always uses its bill sideways, and never, like the other Waders, probes in the mud in search of insects, for which purpose moreover the shape of the bill would render it inapplicable. The Avocet walks and runs along the shores with ease, and wades often so deep into the water as to wet its belly; nor does it hesitate to go deeper; for it swims with ease, and will cross a deep place without avoiding it, though, as a rule, it is comparatively seldom seen on the water. When swimming, it sits as lightly and gracefully as a Phalarope. I have seen a flock feeding in shallow water; and when I have approached rather too close they would wade deeper until they got out of their depth, when they paddled easily across the narrow lagoon and commenced operations again in the shallow water on the other side.

The call-note of the present species is a clear, pleasant, flute-like *kui*, which it does not often utter; for it is by no means a noisy bird. When it settles down from flight it also utters a soft note resembling the syllables *kuitt*, *kuitt*; and besides these, in the pairing-season, the male utters at the nesting-place a rather mournful though flute-like *kleuh*, which is doubtless his love-

song. This note is uttered several times in rapid succession whilst the bird is hovering above the breeding-place. Essentially a gregarious and peaceful bird, the Avocet is scarcely ever seen alone; for in the winter they collect in large or small flocks, and in the breeding-season several pairs always breed together. The nest is nothing but a shallow hole scratched in the ground, in which are generally a few roots and straws, but so few that they cannot possibly be called a lining; and, as a rule, but little concealment is practised in the selection of the nesting-place. But Dr. Cullen states that he has found nests at Kustendji, in Turkey, which were made completely of straws and stems, and built up to the height of six or eight inches. Dr. Cullen remarks that the young birds when in the down plumage have the beak quite straight; but, on the other hand, I may say that I have examined quite young specimens, only a day or two old, which had the bills curved nearly as much as in the old bird. It would be interesting to know how the young are fed, as the peculiar formation of the bill must make it impossible for the bird to feed its offspring by thrusting its bill into their gapes in the usual way; and I cannot help thinking that Mr. Harting is correct in his surmise (Ibis, 1874, p. 248) that Avocets feed their young something in the same way as Puffins do. At present, however, it is impossible to say any thing definite on this point; for, so far as I can ascertain, no one has had an opportunity of seeing the young fed by the parent bird.

The eggs of the Avocet, three or four in number, are deposited about the end of May; sometimes, however, as many as five eggs are laid, though in very exceptional cases. Mr. H. F. Möschler informs me that his collector in South Russia writes to him that he has himself taken an Avocet's nest with five eggs, and has also seen an old Avocet followed by five young ones in down. The nest in question he took in the Calmuck steppe in 1874. According to Naumann both male and female incubate in turn, and incubation lasts about seventeen or eighteen days.

A series of eggs, from various localities, in my collection does not show much variation, except that some are more profusely marked than others. In colour they are clay-buff, or warm stone-ochre, with a faint greyish tinge; and the markings, which are tolerably generally distributed over the surface of the shell, consist of dull blackish grey underlying shell-markings and clear black surface-spots and blotches. Some are rather lighter in tone of ground-colour than others; and one or two are rather more profusely marked at the larger end. In size they vary from $1\frac{38}{40}$ by $1\frac{19}{40}$ to $2\frac{1}{40}$ by $1\frac{21}{40}$, and, like the eggs of most of the Waders, are pointed towards the smaller end.

The specimens figured are an old male from Spain and a nestling from Denmark, both being the specimens above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Spain, June (*M. Llanos*). *b*, ♀. Boel, Jutland, Denmark, June. *c*, *pull.* Boel, Denmark, 1872 (*A. Benzon*).

*E. Mus. Howard Saunders.*

*a*, ♂. Near Malaga, April 19th. *b*, *c*, ♂, ♀. Near marisma of Guadalquivir, May 4th. *d*, ♀. Valencia, April 19th, 1874 (*Martin*).

## Genus HIMANTOPUS.

*Himantopus*, Brisson, Orn. v. p. 34 (1760).
*Charadrius* apud Linnæus, Syst. Nat. i. p. 255 (1766).
*Macrotarsus* apud Lacépède, Mém. de l'Inst. iii. p. 518: an ix. (1801).
*Hypsibates* apud Nitzsch in Ersch & Grub. Encycl. xvi. p. 150 (1827).

The few species included in this genus inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, one species only being found within the limits of the Western Palæarctic Region, where it occurs chiefly in the extreme southern portions. They frequent shallow pools and lakes where there are no rushes or aquatic herbage, but the shores are bare and open, and are found both where the soil is sandy and where it is muddy. They walk with ease, taking somewhat dainty, slow steps, and wade a great deal, frequently in water that reaches up to or beyond their knees. They are not generally shy; but when disturbed they become very wary and cautious. Their flight resembles that of the Avocets; and, like them, they carry their long legs stretched out far behind. Their call-note is a clear, loud, melodious whistle; but, as a rule, they are rather silent birds than otherwise. They feed on small insects, gnats, and flies, which they obtain in damp localities, usually on the shores of lakes and pools. They breed in company, several pairs having their nests in close proximity; and their nests are mere depressions in the ground, scantily lined with grass-bents, in which they deposit two, three, or four eggs, warm stone-buff in colour, spotted and blotched with black and blackish brown.

*Himantopus candidus*, the type of the genus, has the bill about twice as long as the head, nearly straight, being very slightly recurved at the tip, about as broad as high at the base, and gradually tapering to an acute point; tip of the upper mandible sharply decurved; nasal groove extending about half the length of the bill; nostrils linear, subbasal, rather long, pervious; wings very long, pointed, the first quill longest; tail moderate, nearly even; legs very long and slender; tibia bare for more than half its length; tarsus very slender, covered with elongated hexagonal scales; toes three in number, the outer and middle toes connected by a web at the base; claws small, compressed, slightly curved, obtuse, that on the middle toe with the inner edge slightly dilated.



J.G.Keulemans lith.

Hanhart imp

**BLACKWINGED STILT.**
FEMALE AND YOUNG.



1/2

J.G.Keulemans lith

Hanhart imp

BLACK-WINGED STILT.
HIMANTOPUS CANDIDUS

# HIMANTOPUS CANDIDUS.

(BLACK-WINGED STILT.)

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*Himantopus*, Briss. Orn. v. p. 34 (1760).
*Charadrius himantopus*, Linn. Syst. Nat. i. p. 255 (1766).
*L'Échasse*, Buff. Hist. Nat. Ois. viii. p. 114, pl. 118 (1781).
*Himantopus candidus*, Bonnat. Tabl. Encycl. Orn. i. p. 24 (1791).
*Himantopus vulgaris*, Bechst. Orn. Taschenb. ii. p. 325, pl. 28 (1803).
*Himantopus rufipes*, Bechst. Gemeinn. Naturg. Deutschl. 2nd ed. iii. p. 446 (1809).
*Himantopus atropterus*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 315 (1810).
*Himantopus albicollis*, Vieill. Nouv. Dict. x. p. 41 (1817).
"*Himantopus melanopterus*, Meyer," Temm. Man. d'Orn. ii. p. 528 (1820).
*Hypsibates himantopus* (L.), Nitzsch, in Ersch & Grub. Encycl. xvi. p. 150 (1827).
*Himantopus plinii*, Flem. Hist. Brit. Anim. p. 112 (1828).
*Himantopus longipes*, C. L. Brehm, Vög. Deutschl. p. 683 (1831).
*Himantopus asiaticus*, Less. Rev. Zool. 1839, p. 44.
*Himantopus intermedius*, Blyth, Cat. B. Mus. As. Soc. p. 265 (1849).
*Himantopus melanocephalus*, C. L. Brehm, Vogelfang, p. 324 (1855).
*Himantopus nigricollis*, C. L. Brehm, Vogelfang, p. 324 (1855, nec Vieill.).
*Himantopus leucocephalus*, C. L. Brehm, Vogelfang, p. 325 (1855, nec Gould).
*Himantopus brevipes*, C. L. Brehm, Vogelfang, p. 325 (1855).
"*Himantopus minor*, Natt.," Hartl. J. f. Orn. 1860, p. 170.
*Himantopus autumnalis*, G. R. Gray, Hand-l. of B. iii. p. 47 (1871, nec Hasselq.).
"*Himantopus europæus*, Sand.," fide G. R. Gray, Hand-l. of B. iii. p. 47 (1871).

*Échasse blanche*, French; *Ziguiñuela*, Spanish; *Cavalier d'Italia*, Italian; *Fra servient*, Maltese; *Bou-ksaiba*, Moorish; *grauschwänziger Stelzenlaufer*, *Storchschneppe*, German; *Rödbenet-Styltelöber*, Danish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 878; Werner, Atlas, *Coureurs*, pl. 9; Kjærb. Orn. Dan. taf. 33 B; Fritsch, Vög. Eur. taf. 34. fig. 5; Naumann, Vög. Deutschl. taf. 203; Gould, B. of Eur. pl. 289; id. B. of G. Brit. iv. pl. 34; Roux, Orn. Prov. pl. 339; Bechst. Orn. Taschenb. pl. 28.

♂ *ad.* pileo postico, nuchâ et collo postico fumoso-nigris albo immixtis: regione interscapulari et alis intensè nigris viridi et purpureo nitentibus: caudâ pallidè cinereâ: capite, collo et corpore reliquo albis: rostro nigricante: pedibus rosaceis: iride coccineâ.

♀ *ad.* mari similis, sed nuchâ et collo postico cinereo-nigris, dorso, scapularibus et secundariis intimis nigro-fuscis.

*Adult Male* (Sarepta, May). Hind crown, nape, and hind neck black, intermixed with white; upper portion of the back and the whole of the wings deep black glossed with bottle-green or purplish green; tail pale ashy grey, except the outer rectrices, which are white; rest of the plumage pure white; bill blackish; legs rose-pink; iris deep carmine-red. Total length about 13 inches, culmen 2·75, wing 9·5, tail 3·2, tarsus 4·6, bare portion of tibia 3·3.

*Adult Female* (Seville, June). Hind crown and nape blackish grey; hind neck tinged with dark grey; back, scapulars, and inner secondaries dull blackish brown; rest of the plumage as in the male.

*Young.* It is stated to resemble the female; but there is more greyish black on the nape and neck, and the feathers on the upper parts are margined with brownish white.

*Nestling* (Kirghis steppes, June). Covered with close, rather short down, the feathers on the wings and crown just appearing; the down on the crown, hind neck, and upper parts grey, marbled with sooty black; the feathers on the crown and wings black, broadly margined with rufescent ochreous; underparts white; legs yellowish flesh-red; iris yellowish brown.

*Obs.* In the male bird the amount of black on the head and neck differs greatly according to the age of the bird; for younger birds have more black on those parts, whereas in very old birds it disappears entirely, leaving the head and neck pure white. Naumann appears to me in error in describing the adult female as having the back black; for all those obtained during the breeding-season by Mr. O. Salvin, and carefully determined as to sex, have the back brown; and one or two are evidently very old, for they have almost lost the dark markings on the nape. In the breeding-season the male has a faint tinge of rosy red on the underparts, which disappears soon after death. The winter plumage does not differ from that worn in the summer, except that perhaps the upper parts have not so rich a gloss. An old male from Ondonga, shot by the late C. J. Andersson in November, now in the collection of Mr. J. E. Harting (which I have figured), has the entire head and neck pure white without any markings.

The Stilt inhabits Southern Europe, Africa, and Southern Asia, ranging north into Central or Northern Europe only as a rare straggler. It has, however, on several occasions been met with as far north as the British Islands, where examples have been obtained at different seasons of the year, but can only be included as a rare and accidental straggler. Mr. Harting (Handb. Brit. B. p. 135) cites thirty-three recorded instances of its occurrence, twenty-one of which were in England, where, as a rule, it appears to have been more frequently met with on the east and south coasts than elsewhere. The counties where it has occurred are Cornwall, Devonshire, Dorsetshire, Hants, Sussex, Kent, Notts, Oxfordshire, Gloucestershire, Norfolk, Lincolnshire; and it has once been recorded from the island of Anglesea. It has been met with on several occasions in Norfolk; and as Mr. Stevenson (B. of Norf. ii. pp. 244–248) gives full details respecting the various recorded occurrences, I may refer my readers to his excellent work for more precise information respecting it.

With regard to its occurrence in Scotland, Mr. Gray writes (B. of W. of Scotl. p. 303) as follows:—"This curious bird is figured in Pennant's 'Caledonian Zoology,' plate 4, and simply catalogued as a Scottish species on page 35 of that work, the author's authority for its introduction being apparently Sir Robert Silbald, who states, in the work referred to by Pennant (Hist. Scot. lib. iii. 18, tab. 11, 13), that two specimens had been obtained at a lake near

Dumfries; one of these had been examined by the author. The next occurrence of the Black-winged Stilt is thus alluded to by Don in his Forfarshire list, published in 1812:—'I once saw one bird of this species on the mountains of Clova; I have never observed but another, which was on Ben Lawers, in Perthshire, in August 1793. It is a rare bird, and, I believe, but few naturalists have seen it alive.' Later still it is mentioned as a rare species found in the parish of Glenshiel, in Ross-shire, by the Rev. John M'Rae, who published his statistical account in November 1836. I can find no other record of its appearance in any part of Scotland until 1850, when a specimen, killed on the banks of the Clyde, near Port Glasgow, was exhibited at a meeting of the Royal Physical Society of Edinburgh by Dr. J. A. Smith, the Society's secretary. After a lapse of nearly twenty years, it reappeared in 1867; and, from the several records communicated to me, I am inclined to believe that a small flock had visited Britain in that year. In the month of October following, a Black-winged Stilt was seen at Possil marsh, within four miles of Glasgow. It frequented the place three or four days, and was distinctly observed by different persons. Notwithstanding repeated attempts on its life, the bird luckily escaped. Writing from Dumfriesshire, on 25th December of the same year, Sir William Jardine has sent me the following note:—'My gamekeeper gave me the description of a bird he saw about six weeks ago, that I could make out to be nothing but a Black-winged Stilt; and I heard of it being killed about eight miles off; but it had been thrown out, and not a feather was to be got.'"

It appears to have occurred in Shetland; for Dr. Saxby says (B. of Shetl. Isl. p. 197) that "Dr. Lawrence Edmondston observed one amongst some Golden Plovers some years prior to 1843; but neither the year nor the date can be remembered. Messrs. Baikie and Heddle record two that were killed at Lopness, in Orkney, in 1841."

In Ireland it is of extremely rare occurrence. Thompson says that Mr. Ball saw one in a field near Youghal in the winter of 1823 or 1824, one was killed previous to 1837 at Clontarf, Dublin Bay, and one was shot in January 1836 near Lough Mask, county Mayo.

It does not appear to have been met with in Norway, Sweden, or Finland; nor does it range far north in Russia. According to Mr. Taczanowski it is of very rare occurrence in Poland; but there is, he says, a specimen in the Warsaw Museum which was killed at Sosnowica, in the Government of Lublin. In Germany it is only known as a rare straggler from the south, and is, Naumann states, very rarely met with; but examples have been obtained in Suabia, on the Rhine, in Silesia, Saxony, and Anhalt, as also in Switzerland. Mr. Hermann Schalow says (J. f. O. 1876, p. 19) that it is a rare straggler to Brandenburg. He has seen one which was shot near Marwitz, in the late autumn of 1869; and one was obtained in the summer of the same year near Ruppin. Borggreve includes it as a rare and accidental straggler from the south. Schaefer records it once from Pöl and once from the Moselle; and it is stated to have occurred singly in Silesia and on the Elbe. According to Dr. Rey, it occurs in Saxony, where numbers were killed in 1822 and 1829 near Röblingen, Erdeborn, and Etzdorf, on the salt lake; and the Rev. Mr. Pässler says (J. f. O. 1856, p. 62) that it has once been found breeding on the Badetzer pond, in Anhalt, and its three eggs were taken, one of which he now possesses. According to Mr. Collin there are two instances of its occurrence in Denmark—once about a century ago, on Christiansö, and again on Lindholm, near Möen, in the autumn of 1825. He further states that Mr. Möller, of Östrupgaard, assured him that he saw one in the winter of 1864–65, in the north-

western part of the Odense fiord, at a distance of less than ten yards, and he could not possibly have been mistaken as to its being really a Stilt. In Belgium and Northern France it is, as elsewhere in the north of Europe, only of accidental occurrence; but several examples have been killed near Tournay and Bergues, one on the Meuse, and one near Thionville. It is even believed to have nested near Abbeville; and M. Meerzemacher, of Bergues, possesses a completely formed egg taken from a female killed in a salt marsh near that town. In the south of France it is more abundant, and nests regularly in the marshes at the mouth of the Rhone, and up the valley of that river and of the Isère. M. Adrien Lacroix says that it occurs irregularly, on passage, in the French Pyrenees, in September, October, March, April, and sometimes early in May, always in flocks; and he adds that he knows of an instance of seven having been killed at a double shot out of a flock as they flew past, at Portet, ten kilomètres south of Toulouse, on the banks of the Garonne, on the 19th of April 1865. It is found in Portugal, and in Southern Spain is, Colonel Irby says, extremely common. In the marismas of the Guadalquivir, he writes (Orn. Str. Gibr. p. 164), "their numbers are perfectly marvellous. I could not find them nesting nearer to Gibraltar than the above-mentioned marisma. . . . It is almost entirely migratory; but in some years a few undoubtedly remain behind throughout the winter, as I have seen small lots on the 26th and 27th of November in different years, many on the 22nd of December, and others on the 14th of January. The chief numbers appear towards the end of March and beginning of April; and they are then not unfrequently seen near Gibraltar at the mouths of various rivers, but soon pass on to their breeding-places, where they nest in colonies, and deposit their four eggs on the half-dried mud. I have seen eggs as early as the 28th of April; but the majority lay about the 10th of May." Mr. Howard Saunders also writes (Ibis, 1871, p. 387) that it is "common in the marshy plains, where it breeds; but being a very local bird, it is considered quite a rarity in other parts of Andalucia. The nest being situated in a tussock of grass close to, and almost in, the water, the eggs, the complement of which is four, are almost invariably covered with mud, whilst those of the Redshank, which breeds but a few yards off, are always clean." In Savoy it is very rare, as Bailly only cites two instances of its occurrence; but in Italy it is moderately abundant, principally on the spring passage, and is supposed to breed in some parts of the Venetian territory. In Sicily it arrives rather earlier than in Italy, and is more numerous; some nest about the marshes of Catania and similar localities. In Sardinia it is stated to remain over the winter; and Mr. A. B. Brooke refers to it as being an occasional visitant to that island during the cold season. Mr. C. A. Wright says that it is not uncommon in Malta during the seasons of passage, in March and April and again in September and October; and Lord Lilford writes (Ibis, 1860, p. 345) that he found it "common on the shores of Corfu and Epirus in March, April, and May; generally to be seen in small flocks, standing mid-leg in water, and snapping at the midges and other small insects. This species breeds in great numbers in the marshes of Dalmatia, in the neighbourhood of Spalatro." According to Dr. Krüper it arrives in Greece late in March or early in April, and passes northward, a few only remaining to breed in Acarnania, near Missolonghi, and Ætolico.

In Southern Germany it is occasionally met with. Dr. Anton Fritsch says (J. f. O. 1871, p. 386) that it used to appear with tolerable regularity at the Pardubicer pond; Herr Hrodmadko obtained both old and young birds, the former shot in February 1841; Palliardi observed some

in May the same year at a large pond near Franzensbad, and remarks that several were killed at Rozpalovic. Mr. Seidensacher informed me that one was shot near Cilli, in Styria, and is now in the museum of that town; and the Ritter von Tschusi Schmidhofen says that the Rev. Mr. Hanf shot two females on the Surt pond in April.

In Transylvania it is, Messrs. Danford and Harvie-Brown write (Ibis, 1875, p. 420) "rare. It has been got near Hermanstadt, and occasionally occurs in the Strell valley, more frequently during the spring migration. Herr Ottó records a pair from the Mezöség, of which the female was suffering severely from tapeworm." It is not uncommon on the Southern Danube, and breeds in the salt marshes near Kustendji, in Turkey; and Professor von Nordmann states that it is abundant on the shores of the Black Sea. It is found in Asia Minor; and, according to Canon Tristram, it is resident throughout the year in Palestine, where he found it breeding on a small marshy lake in the centre of the country near Jenin.

In Africa it has been obtained as far south as the Cape colony. Von Heuglin states that it occurs in almost all parts of North-east Africa visited by him, but he never observed it on the coasts of Arabia, the highlands of Habesch, and the Upper White Nile, south of the Gazelle River. It is more numerous in the winter than in the summer; but he obtained its eggs in the Nile delta, and believes that it also breeds in Central Egypt, the Fayoom, and Nubia, and possibly on the Tana lake and in the marshes of Sennaar and East Kordofan. It is found in Madagascar, and probably in many parts of the east coast of Africa. Mr. Harting informs me that he has examined and carefully compared specimens from Madagascar of the so-called *H. minor*, and has convinced himself that there is no specific difference between it and the European bird.

In North-west Africa it is common and resident. Mr. Salvin found it breeding in Algeria; and Canon Tristram states (Ibis, 1860, p. 79) that it breeds at Laghouat, but more abundantly in the Northern Sahara, and in the winter it resorts to the ditches of the oases; but Mr. J. H. Gurney, jun., remarks (Ibis, 1871, p. 299) that it is now exceedingly rare at Laghouat, and appears to have quite forsaken that place. Favier says that "it is not found close to Tangier, but frequents freshwater lakes further south, where many remain for the breeding-season; others, arriving during the month of April, pass on northwards and return in November. They appear to migrate by night." It has been recorded from various parts of the west coast of Africa. It has been obtained at Senegal. Pel records it from Accra, on the Gold Coast, whence Mr. J. Smith (Ibis, 1872, p. 293) has sent specimens; and Dr. A. Reichenow states (J. f. O. 1874, p. 376) that he observed it in small flocks on the Gold Coast. According to Mr. Andersson (B. of Damara L. p. 316) it is sparingly met with in the middle and northern parts of Damara Land, but more frequently in the lake-regions and on the river Okavango. There is, Mr. Gurney adds, a specimen in Mr. Harting's collection obtained by Mr. Andersson in Ondonga on the 6th November, 1866. It has, Mr. E. L. Layard states, only once been obtained in the Cape colony, a specimen having been killed on the Cape flats by Mr. Dumbleton. I may also add that, according to Dr. C. Bolle (J. f. O. 1857, p. 337), it has been obtained on the island of Canaria.

To the eastward it has been met with as far as North China, and southward in Asia to Luzon. Mr. Blanford met with it in Persia, and saw some on the Shiráz lake on the 8th June; so it is probable that some breed there. In Baluchistan he frequently observed it in the winter months. Dr. Severtzoff states that it breeds throughout Turkestan in suitable localities; and in

India it is found, Dr. Jerdon writes (B. of India, ii. p. 705) in the cold weather frequenting the edges of tanks and rivers, and occasionally inundated paddy-fields, and feeding on various small mollusks, worms, and insects. It is found in Ceylon, where Mr. Holdsworth says that it is not uncommon at Aripo during the rains; and Lieutenant W. Vincent Legge states (Ibis, 1875, p. 403) that it is "common all the year round at the leways both east and west of Hambantotta." Mr. Swinhoe did not observe it in China; but it was once seen at Pekin by Père David.

Southward it appears to have straggled as far as the island of Luzon; for Dr. von Martens identifies (J. f. O. 1866, p. 28) a specimen from there as belonging to the present species.

In general habits the Stilt reminds one much of some of the long-legged Sandpipers; and, like those, it picks its steps as it walks daintily about in the damp localities it frequents. It walks erect, its neck either drawn in somewhat in the shape of the letter S, or else with it slightly bent and held forward, on the look-out for small insects on which it feeds. I have often watched it wading in the shallow parts of the marshes, where it appears generally to affect the open parts free from grass and cover of any sort. On the whole it is not a shy bird, at least where it is not molested; but where it has been fired at it is careful not to allow any intruder to approach within range; and as it is almost always met with in very open places, it is then by no means easy to stalk it. On the wing it is not difficult to recognize, especially as its long legs are stretched out behind, making it appear as if it had a long red tail. Its long neck is only partially extended; and in its general mode of flight it is not unlike the Avocet.

Its call-note resembles not a little that of the Spotted Redshank (*Totanus fuscus*); and Naumann says that only a very practised ear can detect the difference. It consists of a clear, loud, flute-like whistle, but is not very often uttered; for, as a rule, it is rather a silent bird than otherwise.

It feeds on various kinds of aquatic insects and larvæ, and is said to catch gnats with great adroitness. It obtains its food always in the vicinity of water, and especially in muddy places. So far as I know, it does not appear to catch small fish; but it is very possible that it may, to some extent, feed on these also. Colonel Irby, who met with the present species numerously in Spain, says (Orn. Str. Gibr. p. 164) that "they frequent open, shallow pools and lakes, and are very seldom seen where there is grass or rushes. They are generally very tame and confiding, while their conspicuous black and white plumage and noisy habits render them certain to attract attention, either as they fly with their long pink legs stretched out, Heron-like, behind them, or as they wade about, usually up to their knees, in the shallow water, where they seek their food in the shape of aquatic insects, gnats, and flies." The Stilt breeds usually early in May in the south of Europe, and deposits four eggs in a nest composed of a few grass-bents collected together on the mud bordering the lakes or ponds; and usually the birds collect in larger or smaller colonies for the purpose of nidification. The eggs are rich, warm stone-buff, some darker, others lighter in shade of colour, and are spotted and blotched with black or blackish brown, the markings being, as a rule, larger and more numerous at the larger end. Specimens in my collection vary in size from $1\frac{2}{40}\frac{3}{0}$ by $1\frac{8}{40}$ to $1\frac{3}{40}\frac{3}{0}$ by $1\frac{11}{40}$ inch.

Mr. Salvin, who found it breeding in Eastern Algeria, gives (Ibis, 1859, p. 361) the following particulars respecting its habits, viz.:—This species is "abundant at Zana, a few pairs occurring at Djendeli and Guerah el Tharf. Over the whole of the lower end of the marsh of Zana and

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Chot Saboun the Stilt breeds in great abundance amongst the wet grass, choosing for the position of its nest a small tuft, so as just to keep the eggs out of the water. Sometimes, however, this object is not attained, as we occasionally found nests in which the eggs were half immersed. The bird uses its long legs with much greater ease than might be expected; and its long, deliberate strides, as it stalks about in search of food, are far from being ungraceful. The only time they seem to be in its way is at the moment of taking flight, when they hang awkwardly down till the bird, being fairly started, stretches them out, extending them far beyond the tail. We used to search for the nests of this bird on horseback, and, on observing one sitting, to ride up without taking our eyes off the place. The bird would remain quiet till we were within thirty yards of the nest, when it would walk slowly away, till, aware of our purpose, it would rise and fly, wheeling and screaming overhead. The young Stilt is able to walk almost immediately on leaving the egg; one we found was capable of moving about while the other three were struggling to free themselves from the shell. The nest is composed of a few bits of dead reed or grass. The complement of eggs laid by one bird is four."

In a letter to the Editor of 'The Ibis' (Ibis, 1870, p. 146) some interesting details are given by Mr. A. O. Hume respecting the nidification of this bird in India. "I was," he writes, "delighted at finding the other day that they bred in hundreds at the Sooltanpoor salt-works, which are situated in the Goorgaou district, some five-and-thirty miles south of Delhi. The birds are seen in small numbers throughout the year, but congregate in great numbers early in May about the works, which consist of brine-wells and many hundred acres of shallow rectangular evaporating-pans, from one to two hundred feet square, and from six to ten inches deep. These pans are merely depressions dug in the soil and lined with *chunam* or fine lime, obtained by burning *kunker*, a nodular concretionary limestone, found in beds near the surface, more or less throughout the plains of Upper India. Small strips of ground from one to five or six feet broad, divide the pans; and on the margins of these, or even in the beds of disused pans, where only a little brine ever stands, the Stilts build their nests.

"They collect together small pieces of *kunker*, or the broken lime lining of the pans, into a circular platform, from five to seven inches in diameter, and from two to three inches in height; on this, again, they place a little dry grass, on which they usually lay four eggs, but not unfrequently only two or three. They begin to lay towards the end of May; and by the beginning of July numbers of young are to be seen about, and most of the eggs that remain are hard-set. The majority of the birds lay during the second week in June."

Mr. G. R. Gray (Hand-l. of B. iii. p. 47. no. 10292) and many other authors call the present species *Himantopus autumnalis* (Hasselq.), basing the specific name on Hasselquist's description; but I have convinced myself that this is an error. I have now before me the English edition of Hasselquist's 'Journey,' edited by Linnæus, bearing date 1766, wherein are inserted references to the tenth edition of the 'Systema Naturæ.' From it I transcribe the following (Voy. & Trav. in the Levant, p. 199. no. 27):—"Tringa autumnalis longirostris, dorso abdomineque purpurascente. The Autumnal Plover. It is the size of a hen, and is found in Egypt during the autumn." This description cannot in any way be brought to agree with the present species, and appears to me to agree tolerably well with the young of the Glossy Ibis. Besides, in the same work the Stilt is also included under name of *Charadrius himantopus*.

So far as I can ascertain, there are only five good species of Stilts known, viz.:—

*Himantopus candidus* (Bonnat.), of which the range and description are given above.

*Himantopus nigricollis*, Vieill. (Nouv. Dict. d'Hist. Nat. x. p. 42).—This species differs from *H. candidus* in having the crown, to the portion in front of the eye, the nape, and entire hind neck deep glossy black, except a patch of white above each eye. A male measures—culmen 2·6 inches, wing 8·7, tail 3·2, tarsus 4·2. This bird inhabits the central, western, and southern portions of the United States; and Messrs. Sclater and Salvin say (P. Z. S. 1873, p. 454) that they have examined specimens from California, Guatemala, Columbia, and the Galapagos, and a live example was sent to the Zoological Society's gardens from Brazil.

*Himantopus brasiliensis*, C. L. Brehm (Vög. Deutschl. p. 684, 1831).—This, the southern representative of *Himantopus nigricollis*, is found, Messrs. Sclater and Salvin say, in Southern Brazil, Chili, and the Argentine Republic. It resembles *Himantopus leucocephalus* more closely than it does that species; for the lower nape and hind neck are deep black, a broad black line passes from the nape to below the eye, and there is a broad white band on the fore part of the back separating the black on the hind neck from that on the back. An old male in the collection of Messrs. Salvin and Godman measures—culmen 2·55 inches, wing 9·5, tail 3·35, tarsus 4·5.

*Himantopus leucocephalus*, Gould (P. Z. S. 1837, p. 26), inhabits Southern India, New Guinea, Celebes, Australia, &c. It differs from *H. brasiliensis* merely in lacking the black line from the nape to below the eye; and, as a rule, the black on the hind neck does not extend so far up. A male from Celebes in the collection of Messrs. Salvin and Godman measures—culmen 2·5 inches, wing 9·1, tail 2·8, tarsus 4·6.

*Himantopus novæ-zelandiæ*, Gould (P. Z. S. 1841, p. 8).—This species, which inhabits New Zealand, is easily recognizable from all other Stilts, being sooty black, the back, wings, and tail being glossed with green.

The specimens figured are:—on the one Plate a male with the neck black, killed in the summer, and an old male, with the head and neck white, obtained at Ondonga in November; and on the second Plate an adult female in breeding-dress and a young bird in down,—all being the specimens above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *b*, ♂, *c*, ♀. Seville, Spain, June (*Ruiz*). *d*, ♀. Albania (*Hanbury Barclay*). *e*, ♂, *f*, ♀. Sarepta, May (*Möschler*). *g*, *pull.* Kerghis steppes, June (*Schlüter*).

*E Mus. Salvin and Godman.*

*a*, ♂, *b*, *c*, *d*, ♀. Zana, E. Algeria, June 1857 (*O. Salvin*).

*E Mus. J. E. Harting.*

*a*. France. *b*, *c*. Spain, June (*Lord Lilford*). *d*, *e*, ♂. Sicily (*C. A. Wright*). *f*, ♂. Dobrudscha (*Cullen*). *g*, ♀. Sarepta, May 1872 (*Möschler*). *h*. Algeria (*Troughton*). *i*, ♂. Ondonga, Africa, November 6th, 1866 (*Andersson*). *k*, ♂. Nile Delta, February 12th, 1870 (*Captain Shelley*). *l*. Deccan, India (*Feilden*). *m*. Deccan (*Lieutenant Burgess*). *n*. Nepal. *o*, ♀. Darjeeling (*Whitely*). *p*. Ceylon, February 17th, 1867 (*Buchanan*).

## Genus PHALAROPUS.

*Phalaropus*, Brisson, Orn. vi. p. 12 (1760).
*Tringa* apud Linnæus, Syst. Nat. i. p. 249 (1766).
*Crymophilus* apud Vieillot, Nouv. Dict. viii. p. 521 (1817).
*Lobipes* apud J. Ross in Ross's Voy. 8vo, ii. App. p. 167 (1819).

This genus contains only two species, both of which inhabit the Western Palæarctic Region, being found also in the Nearctic Region and in the northern portions of the Oriental and Nearctic Regions. A third species, *Steganopus wilsoni*, is found in the Nearctic and Neotropical Regions; but this species has been separated generically from our Phalaropes.

The Phalaropes frequent the sea-coast and lochs, both inland and near the sea-coast, though more frequently the latter. They are habitually tame and confiding to a degree. They walk with almost as much ease as any of the true Sandpipers, and swim with great facility, sitting very buoyantly on the water, and are said occasionally to dive. They feed on worms, small crustacea, and aquatic insects of various kinds, and usually pick up their food on the edges of pools, or else obtain it on the surface of the water when swimming. Their flight closely resembles that of the Dunlin. They breed on the shores of lochs close to the edge of the water, their nests being deep, cup-shaped, and constructed of grass-bents and aquatic herbage; and their eggs, four in number, are dull ochreous, or ochreous brown, spotted and blotched with dark dull brown or blackish brown.

*Phalaropus fulicarius*, the type of the genus, has the bill rather longer than the head, slender, nearly straight, rather broader than high at the base, flattened towards the tip, which is gradually rounded and obtuse; nasal groove extending beyond the middle of the bill; nostrils oblong, basal, with an elevated margin; wings long, pointed, the first quill longest, the inner secondaries nearly as long as the primaries, and tapering; tail moderate, rounded; legs slender, rather short, the tibia bare for some distance; tarsus short, compressed, anteriorly scutellate, posteriorly thin-edged; hind toe small, anterior toes moderate, laterally margined with a lobed membrane; claws small, arched, compressed, rather acute.



J.G.Keulemans del.

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**RED-NECKED PHALAROPE.**
PHALAROPUS HYPERBOREUS

# PHALAROPUS HYPERBOREUS.

(RED-NECKED PHALAROPE.)

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*The Coot-footed Tringa*, Edw. Nat. Hist. Birds, i. p. 46, pl. 46 (1745).
*The Cock Coot-footed Tringa*, Edw. Nat. Hist. Birds, iii. p. 143, pl. 143 (1750).
*Phalaropus cinereus*, Brisson, Orn. vi. p. 15 (1760).
*Phalaropus fuscus*, Brisson, tom. cit. p. 18 (1760).
*Tringa lobata*, L. Syst. Nat. i. p. 249 (1766, partim, syn. excl.).
*Tringa hyperborea*, Linn. Syst. Nat. i. p. 249 (1766).
*Tringa fusca*, Gm. Syst. Nat. i. p. 675. no. 33 (1790, ex Briss.).
*Phalaropus yperboreus* (L.), Lath. Ind. Orn. ii. p. 775, syn. excl. (1790).
*Phalaropus fuscus* (Gm.), Lath. Ind. Orn. ii. p. 776 (1790).
*Phalaropus vulgaris*, Bechst. Orn. Taschenb. ii. p. 317. pl. 27 (1803).
*Phalaropus williamsii*, Simmonds, Trans. Linn. Soc. viii. p. 264 (1807).
*Tringa lobata*, Landt, Descr. of Færoe Isl. p. 246 (1810).
*Phalaropus cinereus*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 417 (1810).
*Lobipes hyperborea* (L.), Steph. in Shaw's Gen. Zool. xii. p. 169 (1824).
*Lobipes*, Cuv. (*Tringa hyperborea*, L.), Règne Animal, i. p. 532 (1829).
*Phalaropus ruficollis*, Pall. Zoogr. R.-As. ii. p. 203 (1831).
*Phalaropus cinerascens*, Pall. tom. cit. p. 204 (1831).
*Phalaropus angustirostris*, J. F. Naum. Vög. Deutschl. viii. p. 240, pl. 205 (1836).
*Phalaropus australis*, Temm., fide Schl. Mus. Pays-Bas, *Scolopaces*, p. 58 (1864).
*Phalaropus lobatus* (L.), Salvadori, Ucc. d'Italia, ii. p. 210 (1872).

*Red-necked Phalarope*, *Northern Phalarope*, English; *Dearganallt*, Gaelic; *Phalarope cendré*, French; *der schmalschnäblige Wassertreter*, German; *Odinshane*, Danish; *Helsareji*, Færoese; *Odinshani*, *Sundhani*, Icelandic; *Smalnœbbet Svömmesneppe*, Norwegian; *Smalnäbbad Simsnäppa*, Swedish; *Peukalonpää*, *Vesipääskynen*, Finnish; *Plavunchik-cruglonosey*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 766; Werner, Atlas, *Pinnatipèdes*, pl. 3; Fritsch, Vög. Eur. taf. 39. fig. 5; Naumann, Vög. Deutschl. taf. 205. figs. 1–4; Sundevall, Sv. Fogl. pl. 41. figs. 4, 5; Gould, B. of Eur. pl. 336; id. B. of G. B. iv. pl. 83; Roux, Orn. Prov. pl. 337; Audubon, B. of Am. pl. 340; Bechstein, *l. c.*

♂ *ad. ptil. æst.* capite suprà, nuchâ, dorso et scapularibus cinerescenti-nigris, his vix ferrugineo-ochraceo notatis: uropygio medio dorso concolori, lateraliter albo, supracaudalibus nigris cum plumis nigris albido fasciatis immixtis: remigibus nigricantibus, rhachibus albis, secundariis ad basin albis: tectricibus alarum nigricantibus, majoribus albo terminatis striam albam alarem formantibus: rectricibus

nigricantibus: gulâ albâ: colli lateribus rufis, pectore superiore cinerescenti-nigro, jugulo medio vix rufo notato: hypochondriis pallidè nigricanti-cinereis, plumis nonnullis albido marginatis: pectore imo, abdomine et crisso albis: rostro nigricante, pedibus plumbescenti-griseis: iride fuscâ.

♀ *ad.* mari similis sed ubique sordidior et pallidior, corpore suprà magis rufescente ochraceo notato et pilei plumis eodem colore vix marginatis.

*Ptil. hiem.* (Mexico) capite suprà, collo et corpore subtùs albis: pileo imo, nuchâ et maculâ per et infra oculos nigricantibus: dorso cum scapularibus cinereis, plumis omnibus albo marginatis: alis et caudâ ut in ptilosi æstivâ sed paullo pallidioribus.

*Adult Male in summer* (Kistrand, Finmark, 7th July). Crown, nape, and upper parts generally dull sooty black, on the head slightly marked with dull light brown, and the feathers on the back and scapulars, which are deeper black, broadly margined with rusty ochre or yellowish ochre; sides of the rump white, and some of the upper tail-coverts marked with white, or broadly barred with white: quills blackish, except at the extreme base, where they are white; and the shafts of the quills are also white; wing-coverts blackish; the primary coverts broadly terminated with white, forming a conspicuous alar bar, and the smaller coverts also indistinctly tipped with white; tail blackish brown; sides of the face blackish, slightly marked with rufous-ochre; chin and upper part of the throat white; on each side of the neck, commencing on the auriculars and extending downwards a bright fox-red patch; breast right across sooty blackish, this dark band being narrowest on the centre, and broadest on the sides of the breast, and slightly marked with rusty buff and white; flanks sooty blackish, all the feathers margined with white, rest of the underparts pure white; under wing-coverts black, broadly tipped with white; bill blackish, at the base of the lower mandible dirty yellowish; legs greyish lead-colour; the webs of the lobes lighter; iris dark brown. Total length about 7 inches, culmen 1·05, wing 4·0, tail 1·95, tarsus 0·8. Bill narrow; toes lobed.

*Adult Female in summer* (Greenland). Larger than the male, and much brighter and richer in colour; upper parts much darker black, and having a slaty tinge; the crown and nape unmarked; and the back and scapulars much less marked with rusty ochre than in the male; the dark band across the breast darker and purer in colour, and the rufous patch on the sides of the neck much purer in colour, and more sharply and clearly defined. Culmen 1·1, wing 4·2, tail 2·0, tarsus 0·82.

*Autumn plumage* (Pavda, Ural, 13th August). Forehead white; centre of crown, nape, and back of the neck dull sooty blackish, much paler than in the summer dress; back, wings, and tail as in the summer-plumaged male, but much duller in colour; entire underparts white, this colour extending on the sides of the face above the eye; no red patch on the sides of the neck, this part being white, with the faintest rusty tinge, scarcely perceptible; a black patch extending round and behind the eye; sides of the breast marked with greyish, and flanks slightly striped with dull dark greyish, and very faintly washed with a rusty tinge.

*Obs.* A male and a female from Guatemala, in Mr. Osbert Salvin's collection, resemble the above-described specimen from Pavda; but the margins to the dorsal feathers and the light markings on the upper parts are white, with very few remains of the pale rusty yellow margins of the summer plumage, and the underparts are nearly pure white. Another specimen, from Mexico, evidently in full winter dress, has the entire crown pure white, the nape only being marked with dark sooty brown, the feathers on the back are margined with white without any trace of rusty yellow, and the underparts are pure white, with merely a few indications of grey stripes on the flanks.

3

*Nestling* (N. America). Covered with close short down; upper parts rusty yellowish, more rufous on the head and rump; centre of the crown and a mark before and behind the eye black, and the back with a central and two lateral stripes of that colour, besides being marked with black on the sides; chin and throat pale rufous-ochre, rest of the underparts whitish, becoming sooty grey towards the crissum.

*Obs.* The above specimen cannot be more than two or three days old; but an older one, from Alten in Finmark, has the upper parts feathered, the feathers being intermixed with down, and the underparts covered with down only. In colour it is somewhat like the autumn bird above described; but the upper parts are much darker, and the feathers all broadly margined with rusty orange; underparts white, on the throat slightly washed with yellowish red, and on the breast, flanks, and lower abdomen darkly tinged with sooty grey.

*Obs.* Some authors consider that the present species should bear the name of *Phalaropus lobatus* (L.); but I have deemed it best to discard that name for the following reasons:—Linnæus, in his Syst. Nat. i. p. 249, describes his *Tringa lobata* as follows:—"*T.* rostro subulato, apice inflexo, pedibus pennatis, pectore albo undulato;" he also says "rostrum tenuissimum est." He refers Edwards's plate (no. 308) and Brisson's *Phalaropus* to this species, as well as the first portion of his own description in the 'Fauna Suecica,' no. 179, where he describes a bird in winter plumage which may be either species; but in a second paragraph he describes another specimen from Lapland, which certainly is the Red-necked Phalarope. Edwards's plate (no. 308), however, to which he refers as representing his *Tringa lobata*, is undoubtedly a representation of the Grey Phalarope in winter plumage; and Brisson's *Phalaropus* refers also to the same species. Thus it appears that Linnæus has mixed up the two species under his *Tringa lobata*. There cannot, however, be a shadow of doubt respecting his *Tringa hyperborea*, which he also refers to his 'Fauna Suecica,' no. 179, as representing the specimen described in the second paragraph; and I therefore discard the name of *lobatus* for either species, and use *hyperboreus* for the Red-necked Phalarope, and *fulicarius* for the Grey Phalarope, both of which names are published on the same page in the 'Systema Naturæ' as *Tringa lobata*.

The Red-necked Phalarope inhabits the northern portions of both the Palæarctic and Nearctic Regions during the summer season, migrating southward at the approach of winter, at which season it has been found as far south as Algeria in the Western Palæarctic Region, and as far as the Aru Islands in Asia.

In Great Britain it breeds in the far northern districts, being found elsewhere on the coasts only during migration. Mr. More says (Ibis, 1865, p. 439) that it breeds, according to Colonel Drummond-Hay, in a few scattered localities in the county of Perth, according to Dr. Dewar in that of Inverness, according to Messrs. St. John and Dunbar in that of Sutherland, and according to Captain J. W. P. Orde and Dr. Dewar in the Outer Hebrides. He further says that Mr. Dunn informs him that it is now no longer found in the Orkneys. Formerly, however, it used to breed there; and Dunn wrote in 1837 (Orn. Guide to Ork. & Shetl. p. 88) as follows:—"I have never seen this bird in Shetland. I got several in Orkney, but it is not plentiful. It arrives in the month of July, and departs on the approach of winter. It breeds in August, and builds its nest in swampy situations close to the edge of the water, sometimes on small green islands in the middle of the lakes. The places where I procured their eggs and found the birds most numerous are in a small sheet of water three or four miles from the lighthouse of Sanda, a lake near Nunse Castle in Westra, and at Sandwick near Stromness." Mr. Robert Gray

(B. of W. of Scotl. p. 329) says that, "though met with at irregular intervals over the whole of the western coasts of Scotland, this interesting species is only found breeding in the Long Island or the Outer Hebrides. There are four or five stations there, the most numerously frequented of which is Benbecula, where from ten to twenty pairs are annually found haunting the little lakes that abound in that island. There are also several nurseries in the islands of North and South Uist frequented by at least twenty other pairs, so that the entire Dearganallt population on these three islands may be reckoned at something less than fifty pairs. The time of their appearance varies a little according to the season; generally, however, the stations are occupied in the last week of May, and the nests found in the first week of June. About the middle of July the families gather together preparatory to their departure, which is also, to some extent, regulated by the state of the weather; but as soon as August sets in, young and old have entirely disappeared. The season of 1867 was an exceptional one in Benbecula, and, I presume, at the other stations also—the Phalaropes being as late as the second week of June in arriving, while their departure took place rather before than after the usual time. . . . . I have a specimen of this Phalarope in my collection in full summer plumage from the Island of Skye, but I have failed to discover any breeding-place there. It has also been found there in winter by Captain Cameron; but in other localities on the mainland it is a mere straggler. On the east coast it occurs at irregular intervals from Berwick to Orkney. I have myself met with it in East Lothian and Fifeshire. Two specimens were shot in the Old Sinks, Aberdeen, by Mr. A. Mitchell—one on the 15th, the other on the 18th of September, 1870."

On the English coast it is only a rare visitant, found during migration, and appears to be less common than it used to be, especially on the east coast; for Mr. Stevenson remarks that it is now exceedingly rare on the coast of Norfolk, and he enumerates only eight instances on record of it having been found there during the last twenty years. Yarrell says that it has been obtained in Sussex, Surrey, Norfolk, Yorkshire, and Northumberland; and I have seen examples procured on the coast of Sussex. It has not been recorded from Ireland, where it does not appear ever to have occurred. It is found in Greenland, where it breeds; and, according to Professor Newton, it is very common in Iceland all over the island, arriving late in May, and commencing at once to breed. It is found in the Færoes, where it breeds near some of the lakes in the hills; and Baron von Droste Hülshoff says (J. f. O. 1869, p. 345) that he took its eggs there early in June. It is common in Northern Scandinavia; and in a letter just received from Mr. Robert Collett he informs me that "it breeds throughout Finmark, its chief habitat being the regions north of the Polar circle, where it is extremely common on all the islands, as well as on the coasts of the mainland. It frequents grassy localities, where pools of water are scattered about, all along the coast up to the Varanger fiord, but it has not been observed on the deep mountain-lakes. Like many of those species which belong to the true arctic fauna, it occurs during the summer in the more elevated swamps of the Dovre in as low a latitude as 62°, not being met with in the regions between that and their high northern home. In Southern Norway it is rare during migration; and individuals are occasionally seen during the autumn or winter months off Christiania. Nilsson says that it is very rare on the southern coasts of Sweden. It breeds only in the extreme north of Finland, being, according to Dr. Palmén, found only as a straggler during migration in the central and southern portions of that country; J. von Wright observed three near Kuopio, in

Eastern Finland; but I have very little information respecting its occurrence in Northern Russia, except that Von Heuglin (Ibis, 1872, p. 63) met with it in autumn plumage, early in September, in parties of about six or more, in shallow freshwater pools on Waigats Island; neither Mr. Meves nor Messrs. Harvie Brown and Alston refer to its being found in the Archangel Government; but Sabanäeff informs me that it breeds in the Perm Government, and Teplouhoff met with it during the summer in 58½° N. latitude. In Germany, Denmark, and the northern portions of continental Europe generally, it appears to be met with only as an occasional visitant during the autumn and winter, being most frequently seen on the coast. It does not appear to have been recorded from the Dutch coast previous to 1866, when, according to Heer von Wickevoort Crommelin, it occurred in the autumn; but Baron von Droste Hülshoff records (J. f. O. 1864, p. 426) one shot in June, near Hopp, on the island of Borkum. On the coast of France it is only a rare straggler; and Degland and Gerbe say that several appeared on the coast of Dunkerque, in October 1839, after a severe north-east gale. Professor Barboza du Bocage includes it in his list of the birds of Portugal with a query; but I do not find any record whatever of its occurrence in Spain.

In Italy it is extremely rare; only one or two instances of its occurrence are recorded by Salvadori in his 'Uccelli d'Italia' lately published. I do not find any record of its having been met with in Greece, though Messrs. Elwes and Buckley state (Ibis, 1870, p. 332) that they saw a specimen in Mr. Robson's collection which he had killed on the Bosphorus. In Southern Germany it is met with as a rare straggler; and the Ritter von Tschusi-Schmidhofen informs me that "according to Palliardi, a male was shot on the Eger, in Bohemia, on the 6th November 1844, and came into the collection of Colonel Feldegg, and one was killed on the Oplatil pond on the 18th September, 1853; a Bohemian-killed specimen was in the Kablik collection; and Schary has a young bird obtained at Rumburg on the 18th November, 1854. One obtained at Moorbruch, in Silesia, is in the Troppau Museum; Dr. Schwab shot one on the 18th September 1856, at Mähr-Ostran, in Moravia; according to Von Hüber a pair were shot on the Wiesenlach, in Kärnthen; in Hungary the Rev. Mr. Jukowits saw three on the Neusiedler Lake, and obtained one in immature plumage in 1857, and also obtained three in 1859 at the same place; in Siebenbürgen, Jickeli shot one in August 1870, at the Reissback, near Hermannstadt; and, according to Zwadzki, it has frequently been shot in Galicia." In Southern Russia it is rare, and Von Nordmann makes mention of but one example, obtained near Odessa in March 1835. I do not find any record of its occurrence in Asia Minor or North-eastern Africa; but it has been met with in North-western Africa, and Loche speaks of it as being a rare winter straggler.

To the eastward it is found across Asia to Japan. Mr. Blanford informs me that he found it numerous in Persia during the winter season; and Mr. A. O. Hume (Stray Feathers, i. p. 246) says that Mr. James obtained a specimen in August in the Kurrachee harbour, and forwarded it to him; and Blyth (Ibis, 1859, p. 464) says that one was obtained by Dr. L. C. Stewart near Madras; Severtzoff writes (Turk. Jevotnie, p. 69) that it is found in Turkestan, especially in the south-eastern and north-western districts, where it frequents the rivers, and is a partial migrant. He did not observe it higher than 4000 feet in the mountains. In Siberia it is recorded by Von Middendorff, who says that it appeared on the Taimyr river, in 73¾° N. lat., early in June, and bred there, but was rarer than the Grey Phalarope. On the Boganida, in 20° N. lat., it was not

observed by him previously to the early part of June, and was found breeding numerously in the south-eastern portion of the country; and once he met with it nesting near the highest portion of the mountains of Bosuda Alamyta, on the 31st May, and on the 31st July on the island of Aehae. Von Schrenck (Amur-Reise, p. 418) says that he shot one on the 21st August (2nd September) on the Upper Amoor; and Dr. Taczanowski writes (J. f. O. 1873, p. 102) that Dr. Dybowski says it is rare in Darasun during migration and was observed early in September. Père David obtained one at Takoo, in Northern China, in November; Mr. Swinhoe (P. Z. S. 1863, p. 315) says that flocks come down the Chinese coast as early as October, and some do not return till very late; he has procured them off the Amoy coast in May, in nearly complete summer plumage. It was found in Japan, on the lakes and marshes to the north and west of the Bay of Hakodadi, by the expedition under Commodore Perry. It has also been met with as far south as the Aru Islands, from which locality a pair are said to be in the British Museum; and Professor Schlegel has examined specimens from Celebes, the Moluccas, and Amboina.

In the Nearctic Region the present species is likewise widely distributed, being found, according to Professor Baird, throughout the whole of temperate North America, though only found breeding in the extreme north. On the east coast I found it in New Brunswick, where in the Bay of Fundy it is numerous; and on the west side it is recorded by Mr. Dall (B. of Alaska, p. 290) as very common all along the Yukon, and its eggs were found at Pastolik and Unalaklik. Mr. R. Brown also (Ibis, 1868, p. 424) met with it on Vancouver's Island. To the southward it has been met with as low as Guatemala; Messrs. Sclater and Salvin record it from Dueñas, and Mr. Salvin informs me that he obtained it at Atitlan in 1862. I may add that, according to Dr. E. von Martens (J. f. O. 1859, p. 220), one was found dead in Riddle's Bay, Bermuda, in March 1848, and a female was killed with a stick on the following day in Hamilton water, and and in March 1852 a male was killed in a similar manner.

The present species is extremely tame and confiding in its habits, and appears to have no fear whatever of man and no suspicion of danger. If one is wounded or killed, the others belonging to the same flock, instead of seeking safety in flight, will at once fly down to it; and Mr. Seebohm tells me that when in Norway this spring he shot one out of a flock of six, and the rest, though at first frightened by the report of the gun, almost immediately returned to their dead comrade, and were all five killed by the second discharge. The Phalarope swims with ease, and when on the water resembles a miniature Teal, as it carries itself very like a Duck; but being extremely light, it swims very high in the water, almost on the surface, like an egg-shell, and is very seldom seen sitting at all deep like most of the Ducks. Though it swims with such facility it can walk with almost as much ease as most of the Sandpipers, and is frequently observed searching for food at the edges of pools. It feeds on worms, small shrimps, crustacea, and marine insects of various descriptions, which it picks up on the surface of the water or on the edges of pools or small lakes; and Mr. Collett informs me that he has seen it diving half under the surface of the water in search of food. He found the remains of larvæ of aquatic insects in the stomachs of those he examined. It rises from the surface of the water with ease, and drops on to it again, paddles about, continually nodding its head as it swims. Its flight much resembles that of a Sandpiper; and when on the wing it is exceedingly difficult to distinguish it from the common Dunlin. As it rises it utters a note resembling the word *tirrr*. It breeds, as above

stated, in Northern Scotland, in Iceland and Greenland, and throughout the northern portions of the Palæarctic Region, as well as in Arctic America. It breeds in marshy localities, or near the edges of small pools. I have never taken its nest myself, and am indebted to my friend Mr. J. A. Harvie Brown for the following notes:—"The Red-necked Phalarope breeds on the swampy margins of certain shallow lakes in the Long Island. It places its somewhat deeply cup-shaped nest, which is built of grass and a slender species of water-reed, amongst the wrack and flotsam which is either left high and dry by the receding of the water after a long course of dry weather, or thrown up upon the shores during high winds. This wrack forms a belt along the windward side of the lochs, generally removed some six to ten or twelve feet from, but often much nearer to, the water's edge. The nests often appear to be in danger of being swamped or washed away, so close are they to the water; and I believe it is, indeed, not unfrequently the case that they are so.

"There seems to be some irregularity in the time of nesting of these lovely little creatures. In the Long Island Captain Feilden and myself procured a nest of eggs as early as the 30th May, in 1870, whilst others, in the same year, were not obtained until the 18th and 21st of June, though numbers were observed at more than one locality between the 1st and 7th of June by Captain Fielden, who remained a week longer than I did for the express purpose of searching for their nests. A female shot by him on 1st June contained a full-sized egg, and had sixty-eight seeds in the ovary. This was, in all probability, the bird of the nest procured on the 30th May, as that nest only contained three eggs, and it was, along with the male, shot close to the place.

"In some years the Red-necked Phalarope is not nearly so abundant at its breeding-haunts in the Long Island as in other years. They arrive at their breeding-stations during the last week in May; and, as Mr. R. Gray informs us, the nests are usually found in the first week in June. The nest mentioned above may therefore perhaps be considered an exceptionally early one.

"The Red-necked Phalarope exhibits little fear of man, and is perhaps the tamest of all our wild birds. It is utterly unsuspicious of wrong-doing on the part of the intruder on its domain, and exhibits a trusting simplicity of deportment (if I may so call it) seldom seen even in domestic fowls. The Dotterel (*Charadrius morinellus*) earned its name from the apparent foolishness or stupidity of its behaviour and tameness near the nest; but the Dotterel, though tame, is an eminently suspicious and cunning bird, whereas the present species is thoroughly unsuspicious, and with its loveliness might almost be taken as a perfect type of purity and peace. It will sit on a stone in the water preening its feathers, or float lightly on the surface of the loch and scarcely lift its head on the approach of an intruder.

"With regard to the statements regarding the breeding of this species in Sutherlandshire, I think they are hardly sufficiently authentic to be worthy of the attention of naturalists. Although St. John watched a pair of these birds floating on the surface of a marshy loch (in that county), and running on the broad floating leaves of some water-plant, on the 10th June, 1848, I am of the opinion that they were only resting during their migration to Shetland, where at that time they bred in some numbers. I have failed to hear of any other specimen obtained in Sutherland (to the ornithology of which county I have for some years devoted a considerable amount of attention); nor have I received any authentic account, from any part of the county, of its ever having been found breeding."

I have a large series of the eggs of this Phalarope in my collection, from the Outer Hebrides, Norway, the Færoes, and Greenland, which vary considerably both in colour and markings, some having the ground-colour light clay-yellow or dull ochre, whereas others are as dark as brown paper; and some are covered with spots and small dots all over the surface of the egg, whereas some are only marked here and there with large dark umber-brown or blackish brown blotches, or covered with large blotches, and dotted here and there between these with small dark brown spots. In size they vary from $1\frac{4}{40}$ by $\frac{33}{40}$ inch to $1\frac{10}{40}$ by $\frac{34}{40}$ and $1\frac{7}{40}$ by $\frac{34}{40}$.

The specimens figured are, on one Plate, an adult male, sitting on the water, surrounded by the young in down, an adult female being on a rock close by; and on another Plate, with *Phalaropus fulicarius* in early winter plumage, the present species is figured in the same dress. The specimens figured are those described, and are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *b*, ♀. Greenland (*Erichsen*). *c*, ♂. Kistrand, Finmark, July 7th, 1874 (*Collett*). *d*, *pull.* Alten, Finmark, July 17th, 1872 (*Collett*). *e*, ♂. Pavda, Southern Ural, August 13th, 1868 (*L. Sabanäeff*). *f*. River St. Croix, New Brunswick, 1864 (*Boardman*). *g*. Grand Manan, New Brunswick, 1862 (*Boardman*). *h*. Dueñas, Guatemala, September 1862 (*Salvin*). *i*, *pullus*. North America (*Krider*).

*E Mus. Salvin and Godman.*

*a*, *b*, *c*. Orkney Islands, 1855 (*Hubbard*). *d*. Kautokeino, Lapland, 1857 (*F. Godman*). *e*, ♀. Labrador (*Möschler*). *f*, ♀. Anderson River, Arctic America, June 1864 (*R. MacFarlane*). *g*. Rupert House, Arctic America (*C. Drexler*). *h*. Mexico (*Verreaux*). *i*, ♂, *k*, ♀. Dueñas, Guatemala, August 19th, 1859 (*O. Salvin*).

*E Mus. H. B. Tristram.*

*a*, ♂. North Uist, Scotland, June 27th, 1868 (*Elwes*). *b*, ♀. Shetland, July 1866 (*Saxby*). *c*, ♂. Orkney, June 10th. *d*, ♀. Guatemala, August 19th, 1859 (*Osbert Salvin*).

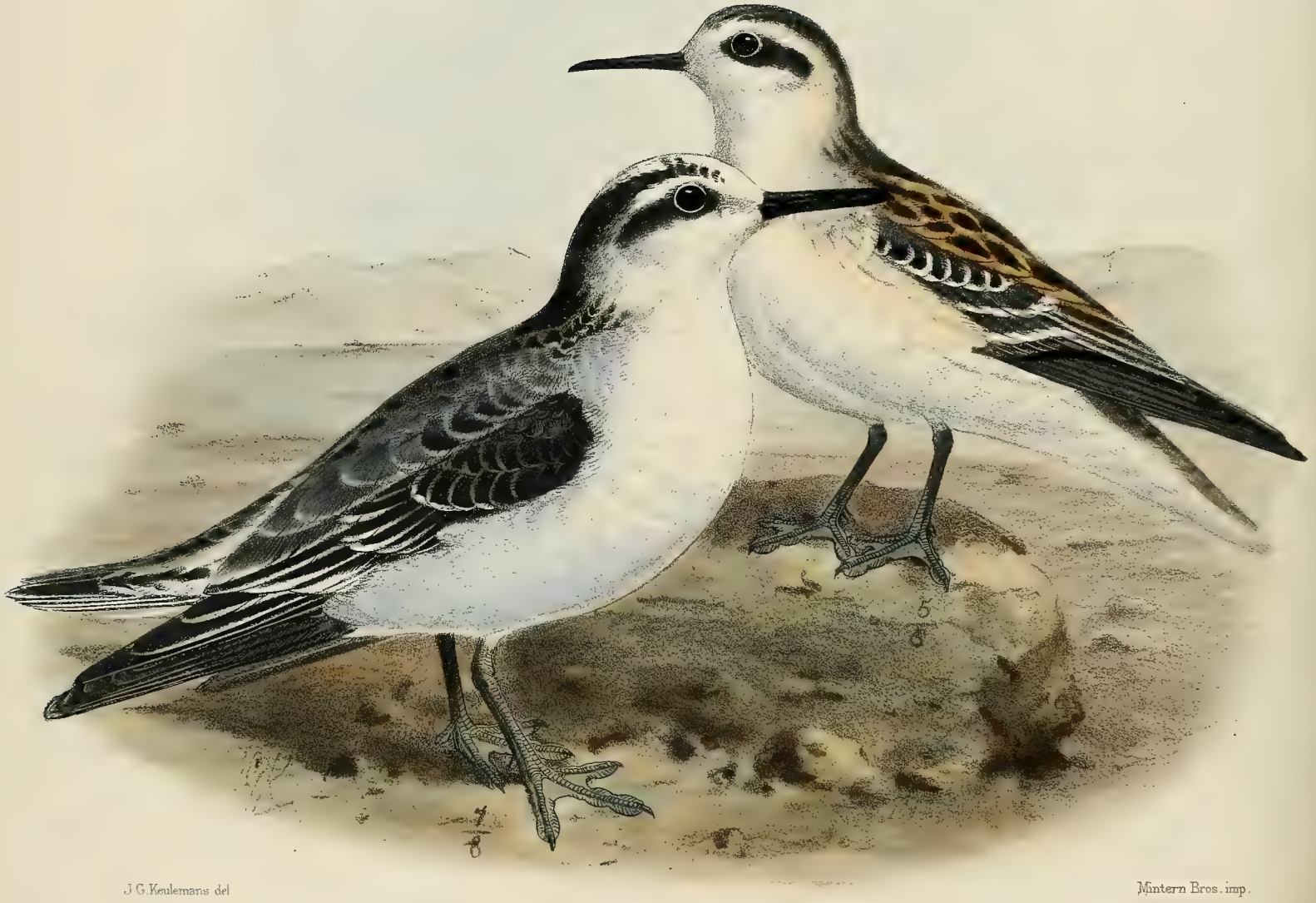


J.G Keulemans del

Mintern Bros. imp

**GREY PHALAROPE.**

PHALAROPUS FULICARIUS.



J.G.Keulemans del

Mintern Bros. imp.

GREY PHALAROPE AND RED NECKED PHALAROPE.
WINTER PLUMAGE.

# PHALAROPUS FULICARIUS.

(GREY PHALAROPE.)

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*The Red Coot-footed Tringa*, Edw. Nat. Hist. Birds, iii. p. 142, pl. 142 (1750).
*The Grey Coot-footed Tringa*, Edw. Gleanings, ii. p. 206, pl. 308 (1760).
*Phalaropus*, Brisson, Orn. vi. p. 12 (1760).
*Phalaropus rufescens*, Brisson, tom. cit. p. 20 (1760).
*Tringa lobata*, Linn. Syst. Nat. i. p. 249 (1766, partim).
*Tringa fulicaria*, Linn. tom. cit. p. 249 (1766, ex Edw.).
*Tringa glacialis*, Gm. Syst. Nat. i. p. 675 (1788).
*Phalaropus lobatus*, Lath. Ind. Orn. ii. p. 776 (1790, ex Briss.).
*Phaloropus glacialis* (Gm.), Lath. tom. cit. p. 776 (1790).
*Phalaropus rufus*, Bechst. Naturg. Deutschl. ed. ii. iv. p. 381 (1809).
*Phalaropus platyrhynchus*, Temm. Man. d'Orn. p. 459 (1815).
*Phalaropus griseus*, Leach, Cat. M. & B. Brit. Mus. p. 34 (1816).
*Crymophilus rufus* (Bechst.), Veill. N. Dict. viii. p. 521 (1817).
*Lobipes hyperboreas*, J. Ross, in Ross's Voy. 8vo, ii. App. p. 167 (1819, nec Linn.).
*Phalaropus fulicarius* (L.), Bp. Comp. List, p. 54 (1838).
*Phalaropus platyrostris*, Nordmann, in Demidoff, Voy. Russ. Mérid. iii. p. 250 (1840).
*Phalaropus asiaticus*, Hume, Stray Feathers, i. p. 246 (1873).

*Red Phalarope*, *Grey Phalarope*, English; *Thorshani*, *Flatnefja-dur-Sundhani*, Icelandic; *Brednæbet-Vandtræder*, Danish; *Brednæbbet Svömmesneppe*, Norwegian; *Brednäbbad Simsnäppa*, Swedish; *Leveänokka-vesipääskynen*, Finnish; *Plavunchik plosconosey*, Russian; *der plattschnäblige Wassertreter*, German; *Rosse Frangepoot*, Dutch; *Phalarope gris*, *Phalarope roussâtre*, French; *Falaropo rosso*, Italian.

*Figuræ notabiles.*

Edwards, *l. c.*; Werner, Atlas, *Pinnatipèdes*, pl. 4; Kjærb. Orn. Dan. taf. LI *a*; Fritsch, Vög. Eur. taf. 39. fig. 3; Naumann, Vog. Deutschl. taf. 206; Sundevall, Sv. Fogl. pl. 76. fig. 4; Gould, B. of Eur. pl. 337; id. B. of G. Brit. iv. pls. 81, 82; Schlegel, Vog. Nederl. pl. 239; Audubon, B. of Am. pl. 339; Wilson, Am. Orn. ix. pl. 73. fig. 4; Pallas, Zoogr. Rosso-As. ii. pl. 63.

♀ *ad. ptil. æst.* pileo, nuchâ, mento et plumis ad basin rostri nigris, pileo saturatiore, maculâ magnâ albâ circum oculos et fere ad nucham productâ: collo postico nigricante: dorso et scapularibus nigris, plumis omnibus rufescente ochraceo marginatis: primariis nigricanti-cinereis, rhachibus albis, in pogonio externo ad basin albidis, secundariis cinereis albido marginatis, intimis nonnullis brevibus fere toto albis, secundariis intimis elongatis nigricanti-cinereis versus apicem vix albido marginatis: tectricibus alarum nigricanti-cinereis, medianis vix albido apicatis, et majoribus valdè albo terminatis:

uropygio cinereo: supracaudalibus ferrugineis medialiter nigro notatis: rectricibus centralibus nigricantibus, reliquis saturatè cinereis, duabus extimis versus apicem rufo notatis: corpore subtùs saturatè ferrugineo: subtectricibus alarum albis cinereo notatis: pedibus sordidè olivaceis: rostro flavo, ad apicem nigro: iride fuscâ.

♂ *ad. ptil. æst.* minor et sordidior: pileo non nigro sed cum nuchâ et dorso nigricantibus brunnescente ochraceo notatis, maculâ in capite laterali indistinctâ, et corpore subtùs pallidiore, abdominis plumis albo marginatis facile a feminâ distinguendus.

*Ptil. hiem.* fronte, gulâ, collo et corpore subtùs purè albis, pileo nigro plumis albis immixtis: nuchâ, collo postico et dorso antico nigris vix albido notatis: dorso et uropygio cum scapularibus pallidè cærulescenti-cinereis vix nigro notatis: alis ut in ptilosi æstivali sed nigricantibus nec nigricanti-cinereis: maculâ per et infra oculos productâ nigrâ: rostro olivaceo: pedibus grisescenti-olivaceis.

*Adult Female in breeding-plumage* (Labrador). Crown, nape, chin, and all round the base of the bill black, this colour being most intense on the crown; a large white patch covering the sides of the head round the eye and extending backwards to the nape, where it nearly joins; entire underparts and neck all round, except a narrow central black line at the back, rich dark rusty red; back and scapulars black, the feathers all margined with rusty yellow; primaries blackish grey on the outer web and on the central and terminal portion of the inner web, the outer and basal portion being white; shafts white; secondaries dark greyish, margined with white, one or two of the inner short ones nearly pure white; elongated inner secondaries blackish grey, narrowly edged with white at the tip; wing-coverts dark grey, the median coverts slightly edged with whitish, and larger wing-coverts broadly terminated with white, forming a broad white bar across the wing; rump greyish; upper tail-coverts dark rusty red, marked with dark brown or black along the centre of some of the feathers; central rectrices blackish, remainder dark slate-grey, the two outer ones on each side marked with dark rufous towards the tip; under wing-coverts white and grey-varied; bill flat, in colour yellowish, except at the tip, where it is black; legs dull olive; iris dark brown. Total length about 8 inches, culmen 1·1, wing 5·35, tail 2·8, tarsus 0·85.

*Adult Male in breeding-plumage* (Egedesminde, Greenland). Differs from the female in being much duller in colour; the crown, nape, and back are black, marked with rusty or yellowish brown, all the feathers being margined with this colour, so as only to allow the black to appear through here and there; the white patch on the side of the face is almost obsolete, and the underparts are much duller in colour, the feathers on the lower abdomen being edged with white. Culmen 0·95, wing 4·75, tail 2·4, tarsus 0·82.

*Winter plumage* (Pagham, Sussex, October). Differs from the summer plumage in having the upper parts generally black and grey and the underparts pure white; forehead, throat, neck, and entire underparts pure white; crown, nape, a narrow line down the back of the neck and the fore part of the back black, slightly marked with whitish, on the crown several pure white feathers; back, rump, aud scapulars dark French grey, intermixed with a few blackish feathers, one or two of which latter are slightly margined with yellowish brown; wings as in the summer dress, but much blacker, the grey shade being almost absent; through and behind the eye a broad blackish streak; bill dark olive; legs greyish olive.

*Young.* Middendorff says that, irrespective of the form of the bill, the young of the present species may be distinguished from those of *Phalaropus hyperboreus* in the first-feather plumage by having the feathers

on the back margined with brownish yellow; whereas in *Ph. hyperboreus* these margins are rusty yellow.

This, a more boreal species than its near ally *Phalaropus hyperboreus*, is, like that bird, found in the north of both the Palæarctic and Nearctic Regions, only occurring in the central districts during the winter season or when on migration.

It visits the shores of England more frequently during migration than the Red-necked Phalarope, and in larger numbers; but its visits are irregular. The largest migration on record of latter years took place in 1866, between the 20th August and the 8th October. Mr. J. H. Gurney, jun., carefully collected all the information which he could obtain respecting the various specimens obtained during that autumn, and published a small pamphlet in which he enumerates several hundred occurrences in Sussex, Hants, Devon, Dorset, Cornwall, Somerset, Kent, Cumberland, Surrey, Yorkshire, Suffolk, Cheshire, Middlesex, Norfolk, Bedfordshire, Cambridgeshire, Essex, Oxfordshire, Radnorshire, Gloucestershire, and Pembrokeshire, the largest number (250) having been obtained in Sussex. Mr. Cecil Smith, writing from Somerset, says that "it is there an irregular visitant. In some years considerable numbers make their appearance in different parts of the county; their visits are by no means confined to the coast or even to the neighbourhood of water, but they seem to drop down occasionally in any part of the county. Some time ago I had an opportunity of watching one for a long time on Northam Burrows, in North Devon; it was close to a large pond, but did not appear to care much whether it was on the water or the land; on the land it was more active than I expected, running about much after the manner of a summer Snipe; on the water it swam very light, almost more so than a Gull." Speaking of its occurrence in Scotland, Mr. Robert Gray writes (B. of W. of Scotl. p. 327), "in its summer plumage the Grey Phalarope is totally unknown in Western Scotland, all the specimens that have occurred being in the plain garb of winter. Even at that season the species is of rare occurrence, single specimens only being met with. I have seen examples from Dunstaffnage Bay, near Oban, the banks of Loch Fyne, and the Frith of Clyde; one was obtained as far up the estuary as Port Glasgow in the winter of 1866. I have also examined specimens from the shores of Loch Etive and the coast near Helensburgh, where they were shot in December 1868. On the east coast of Scotland it is much oftener seen, and appears to visit all the shores from Berwick to Orkney, sometimes arriving in small flocks, but generally in scattered groups. It has been frequently shot in East Lothian on the banks of the Tyne estuary, and also in Berwickshire at the mouth of the Tweed, as I have been obligingly informed by the Earl of Haddington. I watched a pair of Grey Phalaropes sitting in a shallow pool among the rocks near Dunbar, in February 1864; they allowed me to approach within a few feet of the water, and I could almost have touched them with an ordinary cane. On putting them up, they both flew to a little distance, and alighted in another rock-encircled pool, where the depth of water obliged them to swim, which they did with extreme grace. After seeing them picking off some of the smaller marine animals which they found adhering to the seaweed on the sides of the rocks I again disturbed them, after which they took out to sea, and were soon lost to sight." It occasionally visits Ireland during migration, more especially late in the autumn.

In Greenland it is common; and I have received through Messrs. Erichsen and Theobald, of Copenhagen, a series of its eggs obtained by their collectors at Egedesminde, in North

Greenland. In Iceland, Professor Newton writes (Iceland, its Scenes and Sagas, p. 411), "this bird has been but seldom observed by strangers in Iceland; yet in 1858 I found that it was very well known to the natives of the district where Faber had seen it in 1821. On the 21st June in that year he obtained a pair which were swimming in a flock of the commoner species; the female contained largely developed eggs. On the following day he found a single pair at their breeding-place in the neighbourhood of the same locality, and searched in vain for their nest. Finally, on the 9th July, he met with a family party some miles to the eastward. In 1858 I discovered two pairs on a lake in the same district; but a few days afterwards they disappeared, and they certainly did not remain to breed there that year. Last summer a friend of mine sent me four eggs, which had been taken under his special superintendence."

It is found in Spitzbergen; and Professor Malmgren writes (J. f. O. 1863, p. 372) that it is not rare on the coast, including the north-eastern coast. He saw the first at Treurenberg Bay, near Hecla Cove, about the middle of June; a few days later on one was killed near Verlegen Hook. Late in July he saw a flock on the Depotholm, in 80° N. lat., running about the edge of a freshwater marsh; and a few days previously he saw a similar one on an island in 80° 10′ N. lat., but he did not succeed in finding a nest. Professor Newton also writes (Ibis, 1865, p. 505), "although met with in various localities, from the extreme south to the extreme north, and doubtless breeding in many places, the exact spots selected by this beautiful species are still unknown to me. Dr. Malmgren was as unsuccessful in his first voyage as Ludwig and I were. Last year the skipper of the Swedish exploring-vessel found a nest with four eggs up the North Fjord of the Sound at the beginning of July. The contents he put in his cap; but as he was stalking deer at the time, he forgot the treasures he was carrying, and the consequence was that they were all smashed. Later in the month Professor Dunér found a nest with three fresh eggs in Bell Sound. They lay on the ground, which consisted of small splinters of stone, without any bedding. They are now at Stockholm. Neither of the parent birds was observed by the nest." Dr. Th. von Heuglin says (J. f. O. 1872, p. 120) that it is doubtless met with in Novaja Zemlia and Waigatch; but he does not appear to have obtained specimens. In Scandinavia it is rare; and Mr. Collett writes that "it visits the coasts of Norway but sparingly during migration and in the winter season, never remaining there to breed; but it has been observed in East Finmark in summer plumage at the end of August, and in winter dress in October. Like the Red-necked Phalarope this species winters in the southern fjords. In the month of December 1864 a pair were shot among the islands in the Bay of Christiania; and several other specimens in winter dress, from Norway, are preserved in the University Museum." Nilsson (Skand. Fauna, ii. p. 295) speaks of it as one of the rarest of the Scandinavian birds, and says that it is a rare visitant to the northern portions of Sweden. In Finland it has, according to Dr. Palmén (Finl. Fogl. p. 185), only once been obtained, a specimen having been shot at Esbo, in Southern Finland, in November 1851. It is not recorded from Northern Russia by Meves; nor did Messrs. Alston and Harvie-Brown meet with it in the Archangel Government; but Mr. Sabanäeff informs me that it has to his knowledge been once met with on the river Sheksna, in Northern Russia, in the month of May. Like the Red-necked Phalarope it visits North Germany during the late autumn and winter; and, according to Borggreve (J. f. O. 1871, p. 222), it appears to be commoner than that species; and Baron von Droste Hülshoff informed

him that most of the specimens he saw in the various German Museums labelled as *P. cinereus* were the present species in winter plumage. Naumann merely speaks of it as being an extremely rare straggler to North Germany; and Kjærbölling (Danm. Fugle, p. 311) says that it is occasionally seen from November to March, and gives several instances of its occurrence in Denmark. Mr. C. Dubois writes (J. f. O. 1856, p. 506) that it sometimes occurs in Belgium, and that he received two specimens obtained at Ostend. Baron von Droste Hülshoff states that he has several times obtained it from the coast of East Friesland, and believes that it has occurred on the Island of Borkum; and Messrs. Degland and Gerbe write (Orn. Eur. ii. p. 238) that it occurs irregularly on the French coasts during migration in October, November, December, and May. In October 1834 a large number were captured at Dunkerque, and examples were obtained along the whole coast to Bayonne, after a severe storm of several days' duration. Messrs. Jaubert and Barthélemy-Lapommeraye also record its having been obtained near Marseilles ten years subsequently. Professor Barboza du Bocage includes it in his list of birds occurring in Portugal with a query; but Canon Tristram has sent me a specimen obtained at Lisbon. I find only one instance of its occurrence in Spain, that recorded by Colonel Irby, who says (Ibis, 1873, p. 97) that one was killed at the Laguna de Janda, between Cadiz and Tarifa, on the 29th September, 1871. Passing eastward, I find it recorded by Bailly (Orn. de la Savoie, iv. p. 280) as occasionally seen in Savoy during the winter or in the fall of the year, usually after a severe storm or great cold. He possesses one obtained on Lake Bourget, on the 25th November, 1850, and says that it has been met with on the Lake of Geneva. It has likewise occurred in Italy. Savi speaks of it as being found in winter on the lakes of Northern Italy; and Salvadori states (Uccelli d'Italia, p. 210) that two specimens were obtained near Naples in December 1869 and January 1870. It has also been recorded from Southern Germany; and Dr. A. Fritsch records (J. f. O. 1871, p. 385) three occurrences in Bohemia—one near Eger in 1843, one near Rumburg, and one near Pardubic; and Luigi Althammer (Naum. 1858, p. 167) says that one was obtained at Lago di Castellano, in the Tyrol, in January. Von Nordmann says that it is stated to have occurred on the Black Sea and Caspian, but he himself never saw it in Southern Russia. The only record I find of its occurrence in North Africa is one by Mr. C. F. Tyrwhitt-Drake, who says (Ibis, 1867, p. 429) that he obtained one in January at Tangier.

To the eastward it occurs right across Siberia, and has been met with as far south as Calcutta. Von Middendorff writes (Sib. Reise, p. 216) that it arrives with the Red-necked Phalarope on the Taimyr river, and was equally common there and on the Boganida, but was wanting in South-east Siberia. In 75° N. lat. he saw the last on the 15th August. In winter it migrates far south. Mr. A. O. Hume met with it in Sindh, and writes (Stray Feathers, i. p. 245), "I first saw this species when out fishing about two miles outside the Kurrachee Harbour—a small party of about twenty, if I remember rightly, swimming about merrily in the open sea. I saw similar parties in various localities the whole way up the Gulf of Oman; and they are equally common, I was told, in the Persian Gulf. So far as my experience goes, they are very wary, rising *en masse*, and skimming along the surface of the water, for a couple of hundred yards or so, as soon as the boat approaches within a hundred yards of them. With very great difficulty, though I often went after them, I secured a single specimen in the open sea, halfway between Gwader and Muscat; and that I dropped out of a flock at fully a hundred

yards distance. Mr. Blyth procured a single specimen in the Calcutta Market; but it has never yet been recorded by any other observer from India. It is, however, as I ascertained, a regular and well-known visitor to the seas that wash the Sindh and Mekran coasts, and I myself again observed it in the open sea between Kurrachee and Bombay." The occurrence at Calcutta above referred to is that recorded by Mr. Blyth, who says (Ibis, 1859, p. 464) that one specimen in winter plumage was obtained in the Calcutta provision-bazaar on the 11th May, 1846. Mr. Swinhoe did not meet with it in China, but says that it has been procured from Kamtchatka and the Kurile Islands, and doubtless visits the interior of China.

On the American continent it occurs during summer in the high north, and, according to Professor Spencer F. Baird, is found throughout temperate North America during migration and in winter. It occurs off the coast of New Brunswick, from which I have seen a tolerably fair number of specimens. How far south it is met with I am unable to say with certainty; but it has been obtained in the State of New York. On the west coast Messrs. Dall and Bannister met with it in Alaska; and the former states that it was not very rare at the Yukon mouth in June 1868. Abundant at Plover Bay, on the Asiatic side of Behring's Straits, in large flocks in July and August; and Mr. Bannister writes that he shot one at the Redoubt in the fall of 1865, and saw flocks along the beach in September 1866. Audubon (B. of Am. v. p. 293) says that it is met with "occasionally in flocks in Kentucky, on the Ohio; during the autumn it is often seen at sea on the Grand Banks of Newfoundland, and stragglers at times reach as far south as New Jersey; but the route of this species toward warmer regions is along the Pacific coast."

In its general habits and mode of nidification the present species closely resembles its near ally *Phalaropus hyperboreus*; but its breeding-haunts are far further north than those of that species. It breeds in Greenland, according to Dr. Krüper, commonly above 68° N. lat.; and, judging from the number of eggs obtained thence by Mr. Erichsen, it must breed numerously near Upernavik and Egedesminde. As above stated, it has been found breeding in Spitzbergen. Von Middendorff found it breeding in Northern Siberia; and, according to Sir John Richardson, it breeds in North America, on the North Georgian Islands and Melville Peninsula. Its nest is described as being a mere depression in the ground; and one which Mr. Erichsen sent to me (having caused the piece of peat to be cut out) is a mere depression in the peat without any lining whatever. Von Middendorff says that he found fresh eggs on the 17th (29th) July (June?), and saw half-fledged young on the 25th July, O. S. He describes the note of this bird as resembling that of the Red-necked Phalarope, but more Finch-like. I possess twenty eggs of this species from Greenland, taken at Egedesminde and Upernavik, most of which in general character resemble those of *Phalaropus hyperboreus*, but are, as a rule, stouter and larger; and in many the ground-colour is paler. Two clutches, each of four eggs, from Upernavik have the ground-colour pale greenish grey or sea-green, and are covered with purplish brown underlying shell-markings, and very clearly defined blackish brown surface-spots, which at the larger end are almost confluent; and one egg has the larger end covered with one large blackish brown blotch, the rest of the egg being very slightly marked. In size they vary from $1\frac{3}{40}$ by $\frac{33}{40}$ to $1\frac{11}{40}$ by $\frac{35}{40}$ inch, and in shape resemble those of the Red-necked Phalarope, being pear-shaped, but are somewhat stouter.

Mr. Herbert S. Hawkins informs me that in a large series of eggs he has received from

Greenland he finds some smaller than those of *Phalaropus hyperboreus* and some larger, and that it is impossible to distinguish them. His collector in Greenland informs him that the present species breeds almost always on the small islands off the coast, whereas *P. hyperboreus* more frequently breeds on the mainland.

The specimens figured are, on one Plate an adult female, with an adult male swimming in the water beside her, both being in breeding-plumage; and on the second Plate an early winter-plumaged bird is figured with a specimen of *Phalaropus hyperboreus* in the same dress, these three birds being the specimens described, and are in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad. æst.* Egedesminde, Greenland (*Erichsen*). *b*, ♀ *ad. æst.* Labrador (*Möschler*). *c*, ♀ *ad. æst.* Upernavik, Greenland (*Erichsen*). *d*, *jun.* St. Leonard's, Sussex, September 1866 (*R. Kent*). *e*. Devonshire, winter of 1870 (*F. Norgate*). *f*. Pagham, Sussex, October 1870 (*R. B. Sharpe*). *g*. River St. Croix, New Brunswick, winter of 1864 (*G. Boardman*).

*E Mus. H. B. Tristram.*

*a*. Iceland. *b*. Lisbon.

*E Mus. Salvin and Godman.*

*a*, ♂. Labrador (*Möschler*). *b*, ♀. Arctic America (*Lieut. Pim*).

## Genus SCOLOPAX.

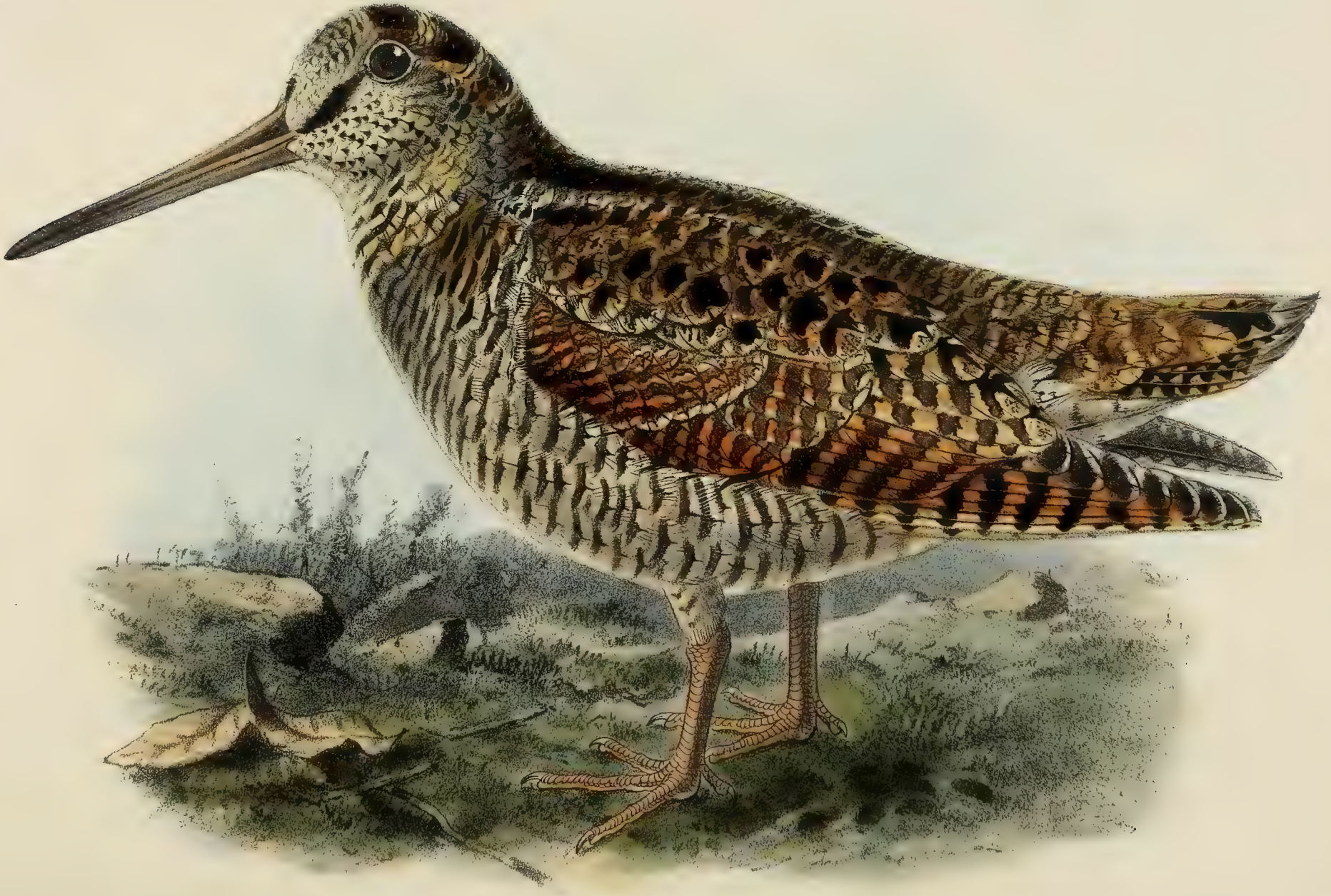
*Scolopax*, Brisson, Orn. v. p. 292 (1760).
*Rusticola* apud Vieillot, Nouv. Dict. iii. p. 348 (1816).

This genus is represented in the Palæarctic, Oriental, and northern portions of the Ethiopian Regions, one species (the type of the genus) being found in the Western Palæarctic Region. In the Nearctic Region it is replaced by a very closely allied genus, *Philohela*.

The Woodcocks resemble the Snipes in general habits, but frequent wooded districts, remaining all the day quietly hidden in the thickets if undisturbed, rousing themselves only towards evening, and searching for food during the night only. They fly swiftly and well, and flit rapidly through the bushes when flushed. Except during the seasons of migration they are solitary in their habits, being found singly or else in pairs or family parties. They are silent birds, except during the pairing-season, when they utter their peculiar call-note as they fly backwards and forwards. They feed, like the Snipe, on insects, worms, &c., and probe the soft soil in search of their food.

They nest in the woods, placing their eggs in a bed of decayed leaves in some open place in the forest or grove where there is but little underbrush. Four is the usual complement of eggs, which are creamy buff or dark stone-buff marked and blotched with purplish grey and dark brown.

*Scolopax rusticola*, the type of the genus, has the bill longer than the head, straight, slender, tapering, higher than broad at the base, both mandibles grooved nearly to the end, the tips hard and obtuse, the upper mandible with a sulcate knob, into the depression of which the lower mandible fits; nostrils basal, linear; wings rather long, broad, pointed, the first quill longest; tail short, rounded; legs short, stout; tibia feathered to the joint; tarsus anteriorly scutellate; hind toe small; anterior toes moderate, the centre one rather long; claws short, slightly curved, obtuse, that on the centre toe longer than the others.



J.G Keulemans.lith.

A. Hanhart imp

WOODCOCK.

SCOLOPAX RUSTICOLA

# SCOLOPAX RUSTICOLA.

(WOODCOCK.)

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*Scolopax*, Briss. Orn. v. p. 292 (1760).
*Scolopax rusticola*, Linn. Syst. Nat. i. p. 243 (1766).
*La Bécasse*, Buff. Hist. Nat. Ois. vii. p. 462, pl. xxv. (1780).
*Rusticola vulgaris*, Vieill. Nouv. Dict. iii. p. 348 (1816).
*Scolopax major*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 31 (1816, nec Gmel.).
*Rusticola europæa*, Less. Traité d'Orn. p. 555 (1831).
*Scolopax pinetorum*, C. L. Brehm, Vög. Deutschl. p. 613 (1831).
*Scolopax sylvestris*, C. L. Brehm, op. cit. p. 614 (1831).
*Scolopax rusticula* (Linn.), Naumann, Vög. Deutschl. viii. p. 361 (1837).
*Scolopax indicus*, Hodg. Journ. As. Soc. Beng. ii. pt. i. p. 490 (1837).
*Rusticola sylvestris*, Macg. Man. Brit. B. ii. p. 105 (1842).
*Scolopax torquata*, C. L. Brehm, Vogelfang, p. 304 (1855).
*Scolopax orientalis*, C. L. Brehm, ut suprà (1855).
*Scolopax scoparia*, Bp. Compt. Rend. Ac. Sc. xliii. p. 579 (1856).
*Scolopax platyura*, Brehm, fide Bp. loc. cit. (1856).

*Coilleach-coille*, *Crom-nan-duilleag*, Gaelic; *Bécasse ordinaire*, French; *Gallinhola*, Portuguese; *Chocha*, *Gallineta*, Spanish; *Beccaccia*, Italian; *Gallina*, Maltese; *Himar el hedjel*, Moorish; *Waldschneppe*, German; *Houtsnip*, *Woudsnep*, Dutch; *Skovsneppe*, Danish; *Rugde*, *Holtsneppe*, Norwegian; *Morkulla*, Swedish; *Lehtokurppa*, Finnish; *Bekassslomka*, *Shabashka*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 885; Werner, Atlas, *Gralles*, pl. 28; Kjærb. Orn. Dan. taf. 37; Frisch, Vög. Deutschl. taf. 226 & 237; Fritsch, Vög. Eur. taf. 37. fig. 10; Naumann, Vög. Deutschl. taf. 211; Sundevall, Svensk. Fogl. pl. 44. fig. 1; Gould, B. of Eur. pl. 319; id. B. of G. Brit. iv. pl. 77; Schlegel, Vog. Nederl. pl. 220.

*Ad.* suprà nigro ferrugineoque et rufescente ochraceo variegatus, dorso magis nigro notato: fronte sordidè cinereâ: capite postico nigro, ochraceo et ferrugineo fasciato: caudâ suprà cinereo et subtùs albo apicatâ: mento albido, vittâ a rostro ad oculum nigrâ: corpore subtùs rufescenti-albido, nigro-fusco fasciato: rostro sordidè carneo, versus apicem fusco: pedibus sordidè fuscescenti-carneis: iride nigro-fuscâ.

*Juv.* adulto similis sed fronte ochraceo lavatâ et fusco notatâ, corpore subtùs pallidiore.

*Adult Male* (Smyrna). Forehead light dull grey slightly marked with dark brown; hind head black crossed by three somewhat irregular yellowish buff and rusty brown bands; upper parts generally richly variegated with black, rusty red, and warm ochre-yellow, the centre of the back being most boldly

marked with black; rump light rusty red barred with blackish; quills black, the outer ones barred with ochreous, the inner ones with rusty red; tail black marked with rusty red and tipped with buffy grey on the upper surface and white on the under surface of the feathers; chin white; sides of the head and upper throat greyish, marked with dark brown and tinged with rufous; a dark streak from the base of the bill to the eye; rest of the underparts dull rufous white marked with narrow transverse undulating bars of dusky brown; bill dull flesh-colour, becoming dark brown towards the tip; legs dull greyish flesh-colour or flesh-brown; iris blackish brown. Total length about 13·5 inches, culmen 3·2, wing 7·7, tail 3·35, tarsus 1·4.

*Adult Female.* Resembles the male, but is rather larger in size.

*Young* (Archangel, 7th June). Resembles the adult, but has the forehead less grey and marked with buff and dark brown, and the under surface of the body is paler than in the adult.

The range of the Woodcock is extensive; for it is found throughout Europe, breeding in Northern and Central Europe, and wintering in the southern countries and in North Africa, ranging eastward in Asia to Japan, and southward to Ceylon.

In Great Britain it is most numerous during passage; but it breeds sparingly in almost all parts of the country, and is found also in some numbers during winter. Mr. A. G. More writes (Ibis, 1865, p. 437) that it is "reported as breeding occasionally in nearly every county throughout England and the south of Scotland. Further north it becomes more numerous, and may be considered to breed regularly from Perthshire northwards to Caithness. There is no doubt that many more birds remain to breed now than formerly; and this increase appears to be owing to the great extent of country which has been covered with plantations during the past few years." I find records of its breeding in various parts of England too numerous to cite here. Mr. Hancock says (B. of North. and Durh. p. 102), in Northumberland and Durham it is "a resident. The Woodcock arrives on our coast in October, and departs in spring; but a few remain in the district to breed. Several nests have been taken; one containing young, was found near Hollyn Hall, on the banks of the Tyne, by the gamekeeper of Edward James, Esq., a few years ago; one of the parent birds was shot from the nest. On the 6th of April 1869, a nest of eggs was also taken at Dilston; and in April 1872 a nest with four eggs, two of which are in my collection, was found near Medomsley, on the Derwent. This nest had been forsaken in consequence of a fall of snow, in which the eggs were covered. In the same year three broods were found in Chopwell woods, in the valley of the Derwent. I am indebted to Mr. Isaac Clark for this information, from which it appears that the Woodcock is a pretty constant breeder in the neighbourhood of the Tyne. Several other nests have occurred in Northumberland and Durham. Between the years 1868 and 1872 seven nests of the Woodcock were found on the banks of the Tyne, between Dilston and Prudhoe, in April and May. In three of them the young were hatched; four others had their full complement of eggs." Respecting its occurrence in Scotland, Mr. R. Gray writes (B. of W. of Scotl. p. 308) as follows:—"In the winter time the Woodcock may be said to be plentiful in North and South Uist and in Benbecula, as well as other parts of the Long Island; but it does not, so far as I can learn, remain in these districts to breed. It has, however, been ascertained beyond a doubt that it breeds occasionally in Mull. Mr. Graham informs me that a party of pea-cutters found a young brood on that island, opposite Iona, and

caught one of the chicks, which he had an opportunity of examining. Nearer the southern mainland it becomes more plentiful, and is found in Islay in considerable numbers, although, as I am informed by Mr. Elwes, comparatively few remain there during the breeding-season; but in Dumbartonshire the nest is frequently met with, especially in the neighbourhood of Loch Lomond, and on some of the islands of the loch itself, where it may be seen on summer nights soaring in circles above its nursery haunts, and occasionally carrying its young tucked between its legs when removing to another feeding-ground. It is probable that it could be traced from north to south in summer, breeding here and there between the counties of Sutherland and Wigtown. Captain Cash, of Dingwall, has informed me that he has undoubted evidence of its nesting in Ross-shire; the nest has been obtained in woods at Brahan Castle, and also on the estate of Castle Leod, both properties being within a few miles of Dingwall. It has also been bred regularly for the last thirty years at Tarbat, in the same county, information to that effect having been obligingly sent to me through Mr. Dickinson, the head keeper there. I have also been informed that Woodcocks have also bred at Beauford, near the Beauly Firth. In the winter of 1868–1869 the birds were very scarce on these two properties—a circumstance probably owing to the heat and want of rain in the month of July, the young birds having been nearly all killed. In many parts of Morayshire, especially in the neighbourhood of Darnaway forest, considerable numbers remain to breed. About the time of the autumnal migration our preserves derive a large accession of Woodcocks from other countries. These flights reach the coasts during the night, and are well known to lighthouse-keepers, who capture the bewildered travellers in considerable numbers. Some of these men have informed me that for seven or eight nights in succession the birds continue to arrive, and hundreds perish by striking themselves against the lantern. The food of this species consists chiefly of small worms and the larvæ of insects. I recollect, however, finding a large quantity of heather shoots in the stomach of a Woodcock shot on the Lammermoor Hills, Haddingtonshire." Mr. Harvie-Brown states that it breeds all over Sutherlandshire wherever sufficient cover is to be found, but perhaps it is most abundant along the banks of the river Shin and at Rosehall; and Dr. Saxby says that it is common enough in Orkney, but has not been known to breed in the islands. Until lately it was very rare in Shetland; but he says that he saw a nest, containing four eggs, on the Hermanness hill, on the 23rd of May, and the shepherd in charge of the hill informed him that it had bred there for several years.

In Ireland, according to Thompson, it winters in larger numbers than in England and Scotland, usually arriving in the north of Ireland in October; but it has occasionally appeared in September. Most leave in March, rarely remaining until the end of the month; but a few remain to breed, and he gives (B. of Ireland, ii. pp. 247–257) very full details relative to nests having been found in various parts of the country.

It has not been met with in Greenland or Iceland; and Captain Feilden remarks that the Færoe Islands must be beyond the western limit of the migratory line of flight of this bird; for it has only once been procured there, on the island of Naalsoe, on the 15th November 1852. Throughout Scandinavia, however, it is common in summer. Mr. Collett says that it breeds in all wooded parts of Norway up to Bodö, but north of the Polar Circle it is only found singly, as for instance in Lofoten. It is very numerous in all non-conifer woods in Western Norway and

throughout the eastern or interior portion in the fir-woods, but is very rare in the open parts of the country, as throughout Listerland and Jæderen. On the fell-sides it breeds rarely above the boundary of the conifer-growth; but in the autumn it visits the juniper regions regularly. A few remain over winter here and there on the south and west coasts up to the Nordfjord; and it is seen annually near Christiansand. According to Nilsson it arrives in Southern Sweden late in March or early in April, and in Central Sweden seldom before the commencement of the latter month, leaving Skåne, in Southern Sweden, again in October and November. It breeds here and there in suitable localities throughout the country. According to Dr. Palmén (Finl. Fogl. ii. p. 228) it is common in Southern and Central Finland, but does not occur in the northern portion. Bergstrand records it from Åland, it breeds here and there, but sparingly, near Åbo, Uskela, Yläne, and Björneborg, is commoner in Nyland, near Nyslott and Kexholm. It is rare north of the Ladoga, and, according to Kessler, is unknown in the Olonetz Government. In the Kuopio district it breeds not uncommonly; but Aschan considers it to be rarer in Jisalmi. Malmgren records it as somewhat rare in Kajana; it breeds in Sotkamo, and has of late years increased in numbers, so that in 1872 it could be considered common; but it scarcely occurs in Kuhmo. Alcenius states that it occurs sparingly between Wasa and Gamle Karleby; and Aschan believes that the elevation between Savolaks and Österbotten, in 64° N. lat., may be considered as about the limit of its normal range in Central Finland. It is occasionally seen in the north; and Mr. Hildén saw a brace on the island of Kraasime, in Hankipudas, north of Uleåborg, in 1870. It arrives in Southern Finland about the 26th of April, and remains until October or November. In Russia it is tolerably common, and certainly breeds near Archangel. Mr. Sabanäeff informs me that it breeds throughout the interior of Russia; but in the southern portions of the Tula and Tamboff Governments it is only met with on passage. The northern limits of its range are scarcely known; but he believes that it ranges as far north as the large forests extend. Kessler says that near Kieff it is a migrant. In the Ural he found it numerous; but, he adds, it breeds but rarely in the larch-woods of Bashkiria. Mr. Goebel says that it is not rare on passage in suitable localities in Courland, but breeds there only sparingly; and, according to Borggreve, it breeds singly, but regularly, in all the large forests in the mountains and on the plains of North Germany. On the spring passage it is numerous near the coast, and is especially so on the island of Rügen. In the autumn it appears in the far east, in East Prussia and Silesia more frequently than elsewhere. In the winter of 1866–67 large numbers remained over winter in the western portions of the empire, whereas usually only stragglers remain. Mr. Collin says that it occurs throughout Denmark on passage, and a few stragglers remain to breed. In the spring the Woodcocks usually appear about the 12th of March, sometimes a few days before; and the passage lasts about a fortnight, or during unfavourable weather as long as a month. They arrive and pass on during southerly winds, and appear again in October during north or north-east winds, sometimes as late as the early part of November; and occasionally a few stragglers remain over winter. It visits Heligoland on passage, as may be taken for granted, and is found on the mainland of Germany at the same seasons, but does not often breed there. Mr. Carl Sachse, writing respecting its occurrence in Rhenish Prussia, says that it arrives near Altenkirchen a full week earlier than in North Germany, and a few remain throughout the winter, the number, however, having been much greater than usual during the winter of 1872–73. It also breeds there,

but not very commonly; and he says that he has found the full complement of eggs from the 27th of March to the 29th of April, and adds that he does not believe that it ever raises two broods in the season, at least in that locality. Professor Schlegel says that it is usually found in Holland on passage, more numerous in the autumn than in the spring, rarely remains over winter, and a few breed there. In Belgium it appears in October and November, and again in February and March, a few breeding there; and, Baron Fallon states, during mild winters not a few remain throughout the whole of the cold season. In France it is tolerably common, chiefly during passage; and in Brittany it is extremely numerous in the autumn. According to Messrs. Degland and Gerbe a few breed in the forests of Northern and Central France; but M. Adrien Lacroix says that it does not breed in the French Pyrenees, where it occurs regularly on passage in October or November, and again in March. According to Professor Barboza du Bocage it is common in Portugal; and it is said to be abundant during the winter in many parts of Spain. Colonel Irby says (Orn. Str. Gibr. p. 177) that it is uncertain both in numbers and as to time of arrival near Gibraltar; "in some seasons, as in 1873, it is tolerably plentiful, whereas in others, as in the winter of 1871–72, it is very scarce." The earliest record of its arrival he gives is the 17th of October; but very few, he adds, arrive until the middle of November. The latest noticed was on the 8th of March; but he has seen them in the Seville market on the 22nd of that month. According to Salvadori it appears in Italy in October, and leaves in the early spring. Not many remain over winter in Northern Italy; but numbers winter in the south, in the Tuscan and Roman marshes, in the Neapolitan States, Sardinia, and Sicily. A few breed in Upper Italy, in Liguria, Lombardy, the Tyrol, and Piedmont. Mr. A. B. Brooke says that, though found in considerable numbers in certain favourable localities in Sardinia, it is less numerous than it used to be; and Mr. C. Bygrave Wharton states that in Corsica it is common on the east, but not on the west coast. Mr. C. A. Wright says (Ibis, 1864, p. 147) that, in Malta, in some years the Woodcock is not uncommon on passage in October and November, and a few occasionally remain in winter; some are also occasionally shot in March. In Greece and the Ionian Islands the Woodcock is a very common winter visitant; and many English sportsmen visit those countries for Woodcock-shooting. Lord Lilford, who has been there several times, writes (Ibis, 1860, p. 340) as follows:—"So much has been said and written concerning the abundance of this species in these countries, that it is unnecessary for me to add to the mass of information already in print on the subject; but a few words on my own experience may not be out of place here. That part of the mainland which lies opposite to the island of Corfu, and which is usually called Albania, is, properly speaking, Epirus, of which Joannina is the capital, Albania proper being the contiguous province to the north. The country near the coast consists for the most part of rocky hills of moderate elevation, thickly overgrown in most places with long grass, and various species of evergreen scrub and thorn bushes. The valleys are marshy, cultivated in some parts, and in others more or less covered with woods of alder, poplar, oak, plane, sycamore, willow, &c., and in many places a thick undergrowth of blackthorn, briars, sedge, reeds, &c.; the fields are all dotted with patches of tamarisk, thorn, and briars, and intersected by numerous small streams. The Woodcocks generally begin to arrive about the 10th of November, their numbers depending on the state of the weather, and in a good season are found in abundance from that time till the 15th of March. I arrived at Corfu on the 24th of December, 1856; the weather was then, and

had been for some weeks, very stormy and unsettled; heavy rains had turned the valleys into lakes; and every one told us that Woodcocks were not to be found. For some days the weather was so bad that it was useless to attempt an expedition to the mainland, and we contented ourselves with wandering about the beautiful arbutus coverts of the island, occasionally finding a Snipe or two in the low grounds, and hearing of, but very seldom seeing, a Woodcock. At last we could stand it no longer, but sailed about 1 A.M. on the 5th of January from Corfu, and on awaking about 7 A.M. found ourselves snugly anchored in the well-known bay of Butrinto. We went ashore, and waded through about two miles of thorn covert, and had what appeared to me very fair sport, till the rain came down in torrents, and drove us back to the yacht. We were three guns; and our bag at 1 P.M. contained twenty-one Woodcocks, two Snipes, one Water-Rail, one Little Gull, one common Buzzard, one Marsh-Harrier, three Sparrow-Hawks, one Barred Woodpecker, and one Red-crested Whistling Duck. My companions complained bitterly, saying it was not worth the trouble of coming over for such a paltry bag, and vowing that they would put up their guns till the weather improved. Now it struck me that the Woodcocks had been flooded out of the wood which we had beaten, and would probably be found on the hills in thicker covert, where they could avoid the drip of the trees; and so it proved, as on the next expedition in which I joined, on which occasion we were bent on the slaughter of wild boars and Roedeer, we flushed great numbers of Woodcocks on the hill-side in the steepest places and most impenetrable thickets. Forty to fifty couple of Woodcocks had been killed in November 1856, on several occasions, by two guns. The weather improved about the beginning of February 1857, and the Cocks came down again into the valleys, where we allowed them but little peace, and used to bag from ten to fifteen couple frequently, till the end of March, when they left the country."

In Southern Germany it is chiefly met with on passage, but occurs sparingly during winter, and breeds in some parts of the country. Dr. Anton Fritsch says that it breeds near Prague, and Lokaj received nestlings from Kuchelbad. Numbers are shot on the spring passage; and in 1857 the total number recorded as having been killed amounted to 3575. Palliardi states that in 1827 as many as 1757 were shot on the Leitomischel estate alone. The late Mr. E. Seidensacher informed me that it was not common near Cilli, in Styria, but he had reason to believe that a few occasionally remain to breed there. It is found in Austria; but I lack information as to whether it breeds there. Messrs. Danford and Harvie-Brown say (Ibis, 1875, p. 423) that in Transylvania it is "generally common. They come in March and April, and, remaining but a short time in the low country, proceed to their breeding-places in the mountains. In September they descend, the flight lasting till the beginning of November, a few remaining still later when the weather is very open." Count Casimir Wodzicki records it as breeding commonly in the Carpathians and the Tatra as high as the tree-growth extends; and it is recorded as tolerably common in the winter on the Southern Danube and in Turkey, but apparently does not remain to breed there. In Southern Russia it is recorded as found chiefly on passage, and but few remain to breed; and in Asia Minor it is a tolerably common winter visitant. Canon Tristram met with it in Palestine; and Von Heuglin says that, though seen annually in Egypt, it is by means a common bird. In March he met with it near Alexandria and Rosetta, and also near Cairo, where it frequents the fields near the town. On the spring migration he never met with it in North-east Africa. It winters in Algeria, where, Mr. Taczanowski says, it is common in the woods near the coast; and

Mr. C. F. Tyrwhitt-Drake says that it is common in Morocco in winter; but M. Favier writes that it is "not abundant around Tangier, arriving during November and departing in March." How far south it straggles in West Africa I am unable to say; but it would seem not to range very far; and though Naumann states (Vög. Deutschl. viii. p. 370) that it occurs in Guinea and on the Gold Coast, this statement has not been indorsed by later explorers in those regions. It is a resident, however, in the Canaries, Madeira, and the Azores, breeding sparingly in all the islands, usually inhabiting the high wooded ravines. In the Azores, Mr. Godman writes (Ibis, 1866, p. 101), "in all the mountain-districts throughout the islands this bird is not uncommon. It breeds, as with us, early in March, as I found young birds in the beginning of April whilst out rabbit-shooting. The native sportsmen (!) shoot them while flying of an evening. It is most abundant in St. George's, Pico, and Flores, where few people kill them."

To the eastward the Woodcock is found as far as Japan, and southward in Asia to Ceylon.

In Persia, Mr. Blanford says (E. Pers. ii. p. 282), it is common in the large gardens, many of which are extensive irrigated orchards and timber-plantations; but it is only found there in the winter months. It is said to abound in the forests near the Caspian at this season; but he never heard of any breeding in Persia. To this Major St. John adds that rose-gardens are the favourite haunt of Woodcocks in Persia, and in December 1866 he shot five out of one small garden in Firúzabád. Dr. Severtzoff states that it is somewhat rare on passage in Turkestan; and Dr. Jerdon (B. of I. ii. p. 670) states, it is "a winter visitant to the more elevated wooded regions of India, the Himalayas, the Neilgherries, the Pulneys, Shervoroys, Coorg, and doubtless all the higher ranges of Southern India. During its periodical migrations north and south, individuals are occasionally killed in various parts of the country; several were procured in the Calcutta market by Mr. Blyth. I have heard of its having been at least once obtained in the Madras market; and various other instances of its having been procured in different parts of the country have come to my knowledge, viz. at Chittagong, Berhampore, Noacolly, Tipperah, Dacca, Masulipatam, &c. The Woodcock is late in arriving, generally not appearing before the middle of October, and usually later; it leaves in February." It is recorded from Burmah by Lieutenant Beavan, who wrote (Ibis, 1868, p. 391) as follows:—"A specimen was sent me in 1866 by Mr. Davis, of the police, from Burmah, who shot it in the cold weather of 1865 at Thatone, near Moulmein. This is apparently the first record of this species occurring so far to the south as the Tenasserim province of Burmah. I myself saw them appear regularly every evening at Rinchingpoong, in Sikkim, in November 1860, and shot one or two, but could not find where they fell in the darkness. The late Major James Sherwill was with me at the time, and also saw them." Colonel Irby says that he found it "common in Kumaon, resorting to the lower hills and valleys in the cold season. In May I have seen a Woodcock and Monâl on the wing at the same time, and suppose that they breed on the high ranges of the Himalayas. In December I imagine that I flushed a Woodcock near Khyreegur, in Oudh, but not being able to get a shot at him, or even mark him down, I cannot be certain that it was one." According to Mr. E. W. H. Holdsworth it is occasionally seen in Ceylon, but is only of rare occurrence there.

In Siberia it is known as a summer visitant; and Dr. Dybowski states that it breeds in the Baikal Mountains, and remains until September. Von Middendorff met with it in the Stanowoi Mountains nearly to the summit, and observed it passing there between the 2nd May

and 1st June (O. S.). Von Schrenck does not record it; but Dr. G. Radde says that after sunset he frequently saw it passing in the woods between the Bystraja brooks and the watershed of the streams on the south-east corner of Lake Baikal. In the Bureja Mountains he flushed it on the 28th August (O. S.) 1858, in the central Salbatche valley, and on the 4th September saw it on passage. In China, according to Mr. R. Swinhoe, it is a not uncommon winter visitant; and he saw one alive in the Chefoo market as late as the 30th of April. Mr. H. Whitely, who obtained it in Japan, writes (Ibis, 1867, p. 206) as follows:—"My specimen of this bird was obtained at Hakodadi, October 6th, 1865, from a native bird-catcher. I saw several others, but, owing to the damaged state of the plumage, could not preserve them. In my rambles near Hakodadi I have sometimes flushed a Woodcock in one particular clump of trees, but was never fortunate enough to shoot it." It was at this spot only that I ever observed it.

It has occurred once at St. John's, Newfoundland, on the 9th January 1862; and, according to Mr. G. N. Lawrence, one, believed to have been killed near Shrewsbury, New Jersey, was bought in a market in December 1859, these being, so far as I can ascertain, the only instances on record of its occurrence in the Nearctic Region.

Like the Double-Snipe the Woodcock is chiefly a nocturnal bird, remaining during the day in dense woods, and, if undisturbed, moves but little from its resting-place until the evening, when it rouses itself from its state of inactivity, and frequents the more open country, searching after food until the early morning, when it returns to its sheltered cover again. Except during passage, it is solitary in its habits; and seldom more than a pair or a brood are found in the same locality during the breeding-season. It frequents wooded and hilly districts where wet patches or morasses are in the immediate vicinity. In the spring and summer the Woodcock has a somewhat curious habit of flying backwards and forwards over the same line of country, uttering its peculiar call-note, previous to proceeding to its feeding-grounds in the evening, and to returning to cover in the early morning. In Scandinavia large numbers are shot by men who ascertain where one of these lines of country is, and station themselves there to shoot the birds as they pass—a mode which is certainly, in our eyes, most unsportsmanlike, and calculated to do as much harm as the practice of shooting Capercaillie and Blackgame when collected together for pairing. Mr. Lloyd, in his work on the game-birds of Scandinavia, gives some interesting details from the works of Scandinavian authors, from which I extract the following notes by Mr. Ekström:—"During its morning and evening flights at this time, the Woodcock gives utterance to a peculiar call-note, which sportsmen express by *knort*, *knort*, *knisp*, or more properly, perhaps, by *orrt*, *orrt*, *pisp*. The first, *knort* or *orrt*, is a hollow, coarse, and somewhat lengthened nasal sound; the second, *knisp* or *pisp*, a short, fine, and sharp sort of whistle, which, when one is accustomed to it, may be heard at a considerable distance. This note clearly appears to be one by which the betrothed invite each other to pairing; for the bird seems to pay very little attention to the *orrt*, but always listens and looks about it as soon as it hears the *pisp*. When two Woodcocks whilst 'rôding' meet, or come into near proximity, they chase each other; and whilst casting themselves with the rapidity of lightning amongst the trees and bushes, even to the very ground, they give quick and hurried utterance to their finer note *pisp*. Although one can seldom witness actual pairing, it is certain that these actions of theirs are preparatory to the

matrimonial act, and are to be looked on as an evidence of the modesty with which the female meets the bold advances of her lover; for when the pairing-season is over one not unfrequently observes Woodcocks to meet whilst 'rôding,' without pursuing each other."

Referring to the custom of shooting Woodcocks by posting one's self in the line of country traversed by them, which is in Swedish called the *drag* or *sträck*, Mr. Ekström says, "should the sportsman be unacquainted with the 'drag,' he ought some fine evening to take a walk in the forest and ascertain its whereabouts. But in this he must be guided by the weather; for if stormy, the task would be hopeless. It should be calm, and, in preference, raw and cold, with a drizzling rain, as the Woodcock then rôdes best. Most commonly the 'drag' is situated amongst hills and eminences, interspersed with morasses. The Woodcock seldom flies across the latter, but along their sides. When, therefore, one meets with a morass of a somewhat oval or oblong form, bounded by woods, one is pretty sure to find what is called a 'kors-drag,' or spot where the birds that 'rôde' along the sides of the morass and those that 'rôde' across the ends of it, intersect each other. The sportsman having found such a locality, stations himself there, and if possible on rising ground, partly to shorten the distance should the Woodcock fly high, and partly that he may be enabled to keep a better look-out. The trees, however, should not be too lofty, nor the under cover too dense, as in that case his view would be impeded, and he would be unable to see the bird until immediately above his head; and being thus obliged to fire somewhat at random, he would be very apt to miss it. When the trees on the spot selected by myself have been too high and close, I have lessened the evil by causing several to be cut down, so that an unobstructed view might be obtained. But this plan has not always succeeded; for though the stumps of the felled trees have been covered with moss &c., the birds have taken the alarm and changed their 'drag.'

"During the first days of spring the Woodcock commences 'rôding' the instant the sun has sunk below the horizon, but at a more advanced period somewhat before its total disappearance, and continues until nightfall. In the morning it begins 'rôding' whilst still quite dark, and ceases previous to its being full daylight. When the bird 'rôdes' there is always an interval between each *tour* and *retour*, which is more observable in the evening, when it goes and returns three several times. The first time it always flies high, and generally with rapidity; the second, its flight is but little above the tree-tops, and commonly slower; the third time still nearer the ground, and yet more leisurely; but it is then, especially in early spring, too dark to take proper aim. One ought, therefore, always to fire when it makes its appearance for the second time.

"In the morning no one attempts thus to shoot the Woodcock. It 'rôdes' at so early an hour that it is difficult to distinguish the bird, and more so to take correct aim. Its 'rôdings' then last so short a time, besides, that when it becomes light enough to shoot they are over."

In Germany as in Scandinavia most of the Woodcocks that are shot are obtained directly or soon after they arrive in the spring; and every German sportsman looks forward with eager pleasure to the arrival of this bird. According to an old sporting rhyme it is supposed to make its first appearance on the so-called "Oculi" Sunday, the third Sunday in Lent, which is usually termed Woodcock Sunday, the Gospel of the day being called the Woodcock Gospel; and though every good sportsman deems it his duty to attend church on that day, his thoughts, I fear, stray

away to the forest glens instead of being fixed on the preacher's discourse. The old sporting rhyme above alluded to fixes the arrival and departure of the Woodcock as follows:—

> Oculi, *da kommen sie* (that is, they are arriving),
> Lætare, *das Wahre* (the main body of the migrants are there),
> Judica, *sind sie auch noch da* (they are still there, but they are decreasing in numbers),
> Palmarum, *trallarum* (it is now almost over, stragglers only being met with).

Thus Palm Sunday closes the term of passage; but in Central Germany these dates are rather early, and it scarcely arrives as early as the third Sunday in Lent. On the autumnal migration, the woods being better clothed with foliage, these birds are not so easily observed, and the sport is less remunerative than in the spring; still a considerable number are shot in some localities.

The migrations of the Woodcock take place at night, and are influenced not so much by the moon as by the wind and weather, especially the former; and Selby's remark that the largest numbers always come over in hazy weather, with little wind, and that from the north-east, has been fully verified by other accurate observers. Not unfrequently they fly towards the light of either a lighthouse or a street lamp; and a considerable number are sometimes collected round some of the lighthouses on our east coast during nights when they migrate freely.

On the east coast of England it is most common during passage, usually in October and March. Mr. Cordeaux says that its numbers vary greatly from year to year, according to the state of the wind and weather at the time of their passage: "with the prevailing winds off the land in October (from south to west), it is never a great Woodcock-season on this coast; but strong winds blowing anywhere from the opposite quarters, from south-east to north-west, and, better, thick, foggy, or drizzly weather accompanying these winds, are invariably highly favourable to an abundant arrival of 'cocks' along the eastern seabord. The stronger the wind and the wilder the weather from these quarters, the greater, as a rule, is the number of birds that may be found."

Early in April nidification commences; and fresh eggs are to be found from the first half of that month to the early part of May. The nest is situated on the edge of some grove or in a tolerably thin part of a thicket, seldom in dense underbrush, and consists merely of a hole scratched in the ground and lined with dry leaves. The eggs, four in number, vary in ground-colour from creamy buff to dark stone-buff, and are more or less marked with pale brown or pale dull purplish shell-markings and dark brown surface-spots, these markings being more numerous towards the larger end. In size they are not very variable, those in my collection varying from $1\frac{28}{40}$ by $1\frac{12}{40}$ inch to $1\frac{31}{40}$ by $1\frac{13}{40}$ inch.

When hatched, the young are attended with the greatest care by the female, who will expose herself freely in their defence in case of any danger threatening them, and will even attack a dog or feign lameness to entice away an intruder. She has also a peculiar habit of carrying off her young to a place of safety when danger is impending. This fact has long been known, and has been recorded by many writers; but for long it was doubted by many people. Judging from the recorded observations of many competent authorities, it would appear that they are not grasped with the claws when carried off, but the female presses them between her legs close to her breast. Mr. Lloyd, the celebrated Scandinavian sportsman, has published some interesting notes on the

Woodcock carrying her young; but perhaps one of the best accounts I have seen is that by Mr. Hancock, who writes (B. of Northumb. and Durh. p. 103) as follows:—"Mr. Charles St. John, who believed that the young, when so carried, were held in the claws, states in his 'Field Notes and Tour in Sutherland,' p. 164, that 'many people doubt the fact of the Woodcock carrying her young, from the wood to the swamp, in her feet; and certainly the claws of a Woodcock appear to be little adapted to grasping and carrying a heavy substance; yet such is most undoubtedly the case. Regularly as the evening comes on, many Woodcocks carry their young ones down to the soft feeding-ground, and bring them back again to the shelter of the woods before daylight, where they remain during the whole day. I myself never happened to see the Woodcock in the act of returning; but I have often seen them going down to the swamps in the evening, carrying their young with them. Indeed it is most evident that they must in most instances transport the newly-hatched birds in this manner, as their nests are generally placed in dry heathery woods, where the young would inevitably perish unless the old ones managed to carry them to some more favourable ground.' In 1849 I accompanied Mr. St. John to Sutherlandshire, on an ornithological tour, and had the good fortune to observe the Woodcock perform this feat. As we were rambling in the neighbourhood of Dunrobin, where it nests regularly, we raised the bird, and at once saw the young suspended beneath the body of the parent. It was close to us when it rose, so that we had an excellent view of both the young and old bird. 'Now,' said Mr. St. John, 'are you not convinced?' 'Yes,' I replied, 'that the young is carried, but not in the claws, which I have said, and still believe, are too feeble for the purpose.' I picked up one of the brood; it was about the size of a Snipe; when I grasped it, it made a peculiar squeaking noise. In the course of half an hour we returned to the spot and again witnessed the old bird carry off another of its chicks, and now became quite satisfied of the *modus operandi*; the young bird was pressed close up to the breast of the parent, as indeed was obvious in the first instance. Hence the inference of us both, that the young was held between the legs and not the claws."

Mr. John J. Dalgleish, to whom I am indebted for the following notes on the habits of the Woodcock in Scotland, also gives particulars, from personal observation, of this habit of the Woodcock. He writes to me as follows:—"My knowledge of the habits of the Woodcock extends principally to the central district of Scotland north of the Firth of Forth and to the western coast of Argyllshire. In the former, through the counties of Stirling, Clackmannan, south of Perthshire, Kinross, and Fife it is generally distributed, but nowhere in great numbers, and almost always in cover, although I once killed one in a turnip-field. On my own property, near Culross, and within two miles of the upper reach of the Firth of Forth, and which contains about 500 acres of cover, there may be from ten to thirty killed annually, according to the season. Their numbers are of course greatly augmented in the winter, large numbers of immigrants being added to those which breed (as after mentioned): indeed I am not sure whether all of those we have in winter are immigrants, and that those which breed with us move further south in pursuance of their migratory instinct; but this is a point very difficult to discover. In the district I now allude to, their numbers are much diminished on the appearance of severe frosty weather, when they appear to go to the coast, where they find the feeding-grounds more open; if, however, the frost be slight, they remain.

"On the west coast of Argyllshire they are found in greater numbers, and are not so much confined to covers, being found in open weather scattered through all the sheltered glens where there is any brushwood or even bracken. On the occurrence of frost, however, they all gather to the low-lying covers near the sea, where its influence serves to keep open the springs; and in such weather very large bags are often made, as they seem to come not only from the outlying spots above mentioned, but from the inland districts, where the frost has sealed up every one of their usual haunts. I have not beside me, but hope to send you in a few days, if not too late, a note of some bags made on such occasions.

"In both of the above districts I have observed with much interest the evening flight of the Woodcock in summer, while they have young, and are engaged apparently in carrying food to them, flying back and forward from their roosting-places to their feeding-grounds. These latter appear to be, in the West Highlands, generally near the shore, as the flight of the birds is generally directed towards it. While passing overhead thus in their semi-owllike flight, they constantly utter their peculiar double note, first a cheep and then a double croak, in quick succession.

"The breeding of the Woodcock does not seem to have been observed in any of the districts above mentioned until within the last twenty years; but in both it now breeds regularly, and in, I think, increasing numbers.

"I have known of their nests from early in March to at least the 17th of May, when I have found fresh eggs; and thus I think it possible that they may bring up two broods in the season. The eggs are generally placed in an open part of the wood, where there is little undercover, and where any decayed leaves may be lying, no nest being formed, the bird seeming to trust to their not being discovered owing to the manner in which they harmonize with the dead leaves.

"I have had on three occasions the good fortune to see the Woodcock in the act of carrying her young. On the first occasion the bird rose from my feet one day in the month of June, in a thick coppice cover in Argyllshire, and flew with her strange burden carried between her thighs for about thirty yards, in the manner well described in a note in Mr. Gray's 'Birds of the West of Scotland.' On following her she again rose, still carrying the young one, and flew into some thick cover. On this and the next occasion, which was in Perthshire, the birds uttered no cry; but the last time I witnessed this curious habit, which was on the 5th of May last, the bird made the peculiar cry alluded to in the note in Mr. Gray's work. On this occasion I could observe the bird more distinctly, as it was in an old oak cover, with very little underwood, where I discovered her. On rising she flew from thirty-five to forty yards, calling as above mentioned, and then, alighting among some grass, seemed to flutter along, still retaining hold of the chick. On raising her again the same manœuvre was repeated, only that the distance flown each time was greater, but always in the segment of a circle, as if she were unwilling to leave the rest of the brood. On returning to the spot where she rose at first, I discovered one of these, which was more than half-grown, the quill-feathers being well formed, and must altogether have formed rather a heavy burden. On taking it up it uttered a cry, which was at once responded to by the parent bird, although the latter did not again take to wing from the bushes into which it had ultimately flown."

Like many other birds the Woodcock is subject both to melanism and albinism: but the

former varieties are by far the rarest; for there are comparatively but few instances on record of black or blackish Woodcocks having been met with, whereas I find that many authors refer to white or pied birds having been obtained, and I have seen several myself, but have never had an opportunity of examining a black one. This black variety has on two or three occasions been obtained in England; and Mr. Collin states that one was shot at Lindeved, near Flensborg, in Denmark, some years ago. Naumann, who says that white, yellowish white, straw-yellow, and pied varieties are met with, does not speak of the blackish one, and apparently never saw or heard of one. There is also a not inconsiderable variation in size. Hodgson separated the Asiatic bird from the European Woodcock on account of a slight difference in size: but this difference is certainly not of specific value; for in Europe also the variation in size, in one and the same country, is quite as marked. Many sportsmen believe in two distinct forms, the smaller of which is said to have the dark markings more distinct, and the legs grey; and this supposed small form is called by the German sportsmen *Steinschnepfe* and *Dornschnepfe*, in contradistinction to the usual name of *Waldschnepfe*, by which this species is known. In order to show the variation in size, Mr. John J. Dalgleish has forwarded to me details of the weights of Woodcocks shot at Gartincaber, near Doune, in Perthshire, between the years 1860 and 1870, from which I see that most of the birds varied in weight between 11 and 12 ounces, but that the heaviest weighed $14\frac{1}{4}$ ounces, and the lightest $7\frac{3}{4}$ ounces.

The food of the Woodcock consists of insects and insect-larvæ, and especially worms, of which it devours large numbers. It collects its food amongst the old leaves, or in the meadows or marshes, and especially in pastures, where, amongst the droppings of the cattle, it finds numbers of worms; and, like the Snipe, it bores the soft soil with its bill in search of food. It feeds chiefly during the night, remaining quiet and concealed during the daytime.

The specimen figured and described is an adult male, from Smyrna, in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Leadenhall Market. *b*, ♀. Leadenhall Market, London, March 31st, 1870. *c*. Colesborne, Gloucestershire, December 10th, 1867 (*H. J. Elwes*). *d* (young in half-down). Christiania, Norway, August 29th, 1871 (*R. Collett*). *e*, ♀ *juv.* Majmaksa, Archangel, June 7th, 1874 (*Piottuch*). *f*. Crimea (*Whitely*). *g*, ♂. Smyrna, January 9th, 1866.

## Genus GALLINAGO.

*Scolopax* apud Brisson, Orn. v. p. 298 (1760).
*Gallinago*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 30 (1816).
*Telmatias* apud Boie, Isis, 1826, p. 980.
*Pelorychus* apud Kaup, Natürl. Syst. p. 119 (1829).
*Enalius* apud Kaup, op. cit. p. 121 (1829).
*Lymnocryptes* apud Kaup, op. cit. p. 118 (1829).
*Philolimnos* apud C. L. Brehm, Vög. Deutschl. p. 623 (1831).
*Ascalopax* apud Keyserling & Blasius, Wirbelth. Eur. p. 77 (1840).

The species belonging to this genus are very widely distributed, being found in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, three species being found in the Western Palæarctic Region.

These birds frequent open marshy localities, and, as a rule, are rather shy and wary than otherwise. During the daytime they remain concealed amongst the grass or herbage, though they may occasionally be seen flying about in the daytime, more especially during the pairing-season. As soon as the shades of evening begin to set in they become restless, and commence moving about in search of food. They walk with ease, and even run swiftly, but usually squat down and hide should danger threaten, unless they take flight. Their flight is very swift and direct; and they will sometimes fly long distances. They feed on worms and insects of various kinds, and obtain their food, to a large extent, by probing in the mud and soft soil with their long, soft, pointed bills. They place their four eggs in a depression in the ground or moss, scantily lined with grass-bents. The eggs are pyriform in shape, greenish buff in colour, spotted and blotched with dull purplish grey and dark umber-brown.

*Gallinago major*, the type of the genus, has the bill very long, straight, slender, flexible, both mandibles grooved, with the terminal portion slightly enlarged, with numerous nervous filaments under the cuticle, but, when dry, pitted with small depressions, tip hard, narrow, but obtuse; the lower mandible shorter than, and fitting into a notch in, the upper mandible; nostrils small, lateral, linear, basal; wings long, pointed, the first quill longest, inner secondaries very long; tail short, slightly rounded; legs moderately long, rather slender; tibia bare for a short distance only; tarsus scutellate; hind toe small, slender, elevated, anterior toes long, slender, scutellate above, free at the base; claws small, slender, acute, slightly curved.



J.G.Keulemans lith

M & N. Hanhart imp

DOUBLE SNIPE.

GALLINAGO MAJOR.

# GALLINAGO MAJOR.

(DOUBLE SNIPE.)

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*Rusticola* s. *Scolopax media*, Frisch, Vorst. Vög. Deutschl. pl. 228 (1763).
*Scolopax major*, Gm. Syst. Nat. i. p. 661 (1788).
*Scolopax palustris*, Pall. Zoogr. Rosso-As. ii. p. 173 (1811).
*Scolopax media*, Schinz, Vög. Schw. p. 206 (1815).
*Gallinago major*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 31 (1816).
*Telmatias gallinago*, Boie, Isis, 1826, p. 980 (nec Linn.).
*Telmatias major* (Gm.), C. L. Brehm, Vög. Deutschl. p. 615 (1831).
*Telmatias nisoria*, C. L. Brehm, op. cit. p. 616 (1831).
*Scolopax leucurus*, Swains. Faun. Bor.-Am. ii. p. 501 (1831).
*Gallinago montagui*, Bp. Comp. List, p. 52 (1838).
*Ascalopax major* (Gm.), Keys. & Blas. Wirbelth. Eur. pl. 78 (1840).
*Scolopax solitaria*, Macg. Man. Brit. B. ii. p. 102 (1840).
*Gallinago media* (Sch.), Licht. Nomencl. Av. p. 93 (1854).
*Telmatias brachyptera*, C. L. Brehm, Vogelfang, p. 305 (1855).
*Telmatias uliginosa*, C. L. Brehm, op. cit. p. 305 (1855).

*Grande Bécassine*, French; *Narseja grande*, Portuguese; *Agachadiza real*, Spanish; *Croccolone*, Italian; *Bekkach-ta-meja*, Maltese; *Doppelschneppe*, *grosser Sumpfschnepfe*, German; *Poelsnip*, Dutch; *Tredækkare*, Danish; *Dobbelt-bekkasin*, Norwegian; *Dubbel Beccasin*, Swedish; *Heinäkurppa*, Finnish; *Leshenok*, Russian.

*Figuræ notabiles.*

Werner, Atlas, *Gralles*, pl. 29; Frisch, Vög. Deutschl. taf. 228; Fritsch, Vög. Eur. taf. 37. fig. 7; Naumann, Vög. Deutschl. taf. 208; Sundevall, Svensk. Fogl. pl. 44. fig. 3; Gould, B. of Eur. pl. 320; id. B. of G. Brit. iv. pl. 78; Schlegel, Vog. Nederl. pl. 221; Roux, Orn. Prov. pl. 300.

♂ *ad.* fronte et capitis lateribus cervino-albidis, nigro-fusco guttatis: pileo centrali et nuchâ nigris centraliter striâ cervinâ notatis: corpore suprà saturatè nigro-fusco, pallidè cervino-isabellino et rufescenti variegato, plumis in dorsi lateribus cervino marginatis: remigibus nigro-fuscis: tectricibus alarum albido terminatis: rectricibus centralibus ad basin nigricantibus et in parte reliquâ rufescentibus nigro variegatis: rectricibus exterioribus albo terminatis, tribus extimis in dimidio apicali albis: gulâ et collo cervinis, nigro-fusco notatis, mento cervino-albido: corpore reliquo subtùs albido, pectore et hypochondriis cervino lavatis et nigro-fusco transfasciatis: subalaribus albis, nigro fasciatis: rostro ad basin carneo, versus apicem nigro-fusco: iride fuscâ: pedibus pallidè plumbeis.

*Juv.* adulto similis, sed suprà magis rufescens, tectricibus alarum angustiùs albo terminatis et fasciis in corpore subtùs angustioribus.

*Adult Male* (Schleswig, 1st May). Forehead and sides of the head buffy white dotted or marked with blackish brown, centre of the crown and nape black with a central pale buff streak; upper parts deep blackish brown variegated with pale creamy buff and rufous, the feathers on the sides of the back margined with creamy buff so as to make a broad stripe on each side of the back; quills blackish brown; wing-coverts broadly tipped with dirty white, central tail-feathers blackish at the base, elsewhere rufous variegated with black, the outer ones broadly tipped with white, the three outermost having the terminal half pure white; neck and throat warm buff marked with blackish brown, the chin paler and unspotted; rest of the underparts white tinged with buff on the breast and flanks, these latter tolerably closely marked with almost semicircular blackish brown bars; under wing-coverts and axillaries white barred with black; bill dull flesh-coloured at the base, the rest brown darkening into black towards the tip; iris dark brown; legs dull flesh-colour, becoming dull lead-colour on the joints. Total length about 11·5 inches, culmen 2·4, wing 5·5, tail 2·5, tarsus 1·4.

*Adult Female.* Similar to the male in plumage and size, except that she is perhaps a trifle larger.

*Young* (Skara, Sweden, 19th July). Differs from the old bird in having the upper parts more rufous, the wings less marked with white, and the markings on the underparts less clearly defined.

*Nestling in half down* (Zostowa, Archangel). Closely resembles the young of the common Snipe, but may be distinguished by having the underparts more clearly marked, by the outer tail-feathers, which are just appearing, being white, and the first quill lacking the white external margin.

The present species inhabits Northern, and more especially North-eastern, Europe during the breeding-season, migrating southward at the approach of winter, at which season it is found in South Africa. To the eastward it occurs in Asia as far as Siberia.

It is found more especially in the east of Europe; and in the west of Europe it is nowhere common. With us in Great Britain it only occurs as a rare straggler during passage, and has never been known to breed here. It has been obtained in most parts of England, but is, as a rule, far more commonly met with on the east side of the island. Mr. Stevenson says (B. of Norf. ii. p. 299) that in Norfolk it "is a regular autumnal visitant, though for the most part in small numbers, and appears with the earliest flights of the common species in August and September. From my own notes for the last twenty years, I find the 17th of August and the 14th of October the earliest and latest dates of its occurrence in Norfolk; and in no instance have I heard of its being killed here during the winter months. Another peculiarity also of this bird is the fact that it is scarcely ever known to visit us in spring, when the common Snipe again makes its appearance, in considerable numbers, on its northward passage." Mr. Cordeaux says that it is very rare in North Lincolnshire. One, he says, was shot in a potato-field near the Ashby Decoy, in September 1868; and another was killed on the river Hull in October 1863. Mr. Robert Gray says that it has on several occasions been met with on the west side of Scotland. One, he says, was shot near Ardrishaig in the autumn of 1864; it has been killed in Renfrewshire; and one was killed on the 15th September, 1868, in the parish of Stewarton, Ayrshire, by Mr. W. Boyd, of Greenock. On the east coast it occurs more frequently than on the west side; and Mr. Gray cites instances of its occurrence in Roxburghshire, Forfarshire, and Fifeshire. According to Mr. Wardlaw-Ramsay two were shot near St. Andrew. Mr. St. John states that it breeds in Sutherland, which is doubtless an error; and Mr. Sinclair records it from Caithness.

Messrs. Baikie and Heddle state that it occurred on Sanday in September 1815; and Dr. Saxby says that he has met with it in Shetland. In Ireland, according to Thompson, it has been occasionally met with in various parts of the country.

In Scandinavia it is tolerably common throughout the country, and breeds in some numbers. Mr. Robert Collett informs me that it "breeds from the southernmost portion of Norway up to Tromsö (in 69° 46′ N. lat.), but it does not occur in Finmark proper. It is, however, not evenly distributed throughout the country south of the above boundary, but, like *Anthus pratensis*, *Charadrius pluvialis*, *Cyanecula suecica*, *Asio accipitrinus*, *Motacilla flava*, and many other species, it is confined almost entirely to the birch-region on the fells—that is, to the alpine region, above 2500 feet altitude, where the large open flat places are most suitable to its habits. But it also breeds in a few localities on low islands close to the coast, as, for instance, on the Hvalöer, on Jæderen, near Stavanger, and in several places north of the Trondhjemsfiord. In the lowlands it only occurs during passage, when in some localities it is very common, as, for instance, a little above Christiania, in some places near the Christiania fiord. It arrives in Norway about the middle of May, and by the end of that month it resorts to the fells to commence nidification. In the latter end of August or the middle of September both old and young birds, the latter being then full-grown, return to the lowlands, and leave the country about the middle of September. A few, however, may generally be found on Jæderen throughout the winter, as also on the flat portions of the country near the sea on the south-west coast. Most of those which breed in Norway appear to migrate to and from their breeding-haunts through Sweden; and its line of migration is therefore from east to west (and *vice versâ*), rather than from north to south. In Sweden it breeds from Skåne to Lycksele, in Southern Lapland, where Professor Zetterstedt met with it. In the country north of the Dalelf it is, as a rule, rare even in suitable localities. In Central Sweden it is more common, chiefly in scattered pairs on meadows and the edges of lakes, or in some numbers in the valleys through which the rivers flow, where there is abundance of grass land. In Wermland it is stated to be somewhat rare, but is more common in Nerike along the Svartå; but few occur in Westmanland, except in the eastern portion; and it is very rare in Södermanland. In Östergötland it is not common; but a tolerable number breed in the vicinity of Söderköping and around Tåkern; in Westergötland it is more numerous along the Tidan and in the low valleys between the mountains; it is but rare in Bohuslän, except in the vicinity of Göteborg. It appears to be most numerous in Upland, where it is said to be commoner than anywhere else in Sweden. Numbers breed in the lovely meadow-lands which are intersected by brooks in the northern portion of Upsala Län. In Fjerdhundra, along the watercourses which fall into the Temna, and in all the valleys which converge to the Mälaren, and in many portions of Roslagen, it is equally numerous; and consequently Upland appears to be its true home. In Southern Sweden it occurs in some numbers in the Emmåns valley; in Kalmar Län and in Skåne it is chiefly found in the vicinity of Christianstad. Probably, however, it breeds in many parts where it has not been recorded, as it is a species which does not readily betray its presence. It appears to occur only in the southern portion of Finland; and even there, Dr. Palmén says, it is by no means numerous, though more so in some years than in others. It is said to have been met with as far north as Wasa; but this Dr. Palmén considers to be an exceptional case. In Russia, however, it ranges much further

north, as I have received both birds and eggs from Archangel, and Messrs. Seebohm and Harvie-Brown found it breeding commonly in the delta of the Petchora. Mr. Sabanäeff informs me that it breeds commonly throughout Central Russia, but is not so numerous as the common Snipe. In the Ural he found it throughout the Perm Government, and as far north as 63° N. lat. It appears to be common in Poland and the Baltic Provinces; and I have frequently seen it near St. Petersburg, where, I was told, it is tolerably numerous. Borggreve says that in North Germany it becomes rarer towards the west, and is chiefly found near the coast, becoming very rare inland. In Mecklenburg, Pomerania, and East Friesland it breeds here and there. Von Preen shot it off its eggs in Mecklenburg; Wiese believes that it breeds in the Peene valley; and Von Negelein writes that it breeds, and is common on passage, in Oldenburg. In Denmark it appears to be by no means uncommon during the summer season; and it breeds in Jutland, whence I have received many birds and eggs. It occurs in Holland and Belgium during passage, chiefly in the autumn; and in France, according to Messrs. Degland and Gerbe, it occurs on passage in April and August, but is not common. In Portugal it is stated by Professor Barboza du Bocage to be rare; and with reference to its occurrence in Spain, Colonel Irby writes (Orn. Str. Gibr. p. 176), the present species "is only met with near Gibraltar on passage, 'here to-day, gone to-morrow.' I saw two and shot one at Casa Vieja on the 24th of October, 1868; one was killed near Gibraltar on the 17th October, 1871; and I know of another obtained in April. It is there a well-known bird, but, passing north late in April and early in May, and returning again in September and October, is not very liable to be noticed; and I imagine that their chief line of migration lies more to the eastward." Mr. Adrien Lacroix speaks of it as occurring in the French Pyrenees in the winter and on passage. It passes through Switzerland at the two seasons of migration, but sometimes more numerously than at others; and, according to Salvadori, it is not very common in Italy, where it occurs late in April and in May, and again, though in smaller numbers, on the autumn passage.

Mr. C. A. Wright states that it is not uncommon in Malta in April and May, and is occasionally seen earlier; but he never heard of a specimen having been seen in the autumn or winter. In Southern Germany it is somewhat rare. The late Mr. E. Seidensacher informed me that it was occasionally met with in Styria in the autumn, but only as a rare straggler; and Dr. Anton Fritsch states that it is now and again met with singly in Bohemia. The same may be said regarding its occurrence in Austria; and Messrs. Danford and Harvie-Brown, in their paper on the ornithology of Transylvania, say that "solitary birds are not rarely met with during migration at Hátzeg, the Strell valley, Gyéké, and other localities." Messrs. Elwes and Buckley obtained it once in Bulgaria; Dr. Krüper states that it is occasionally met with in Greece in the winter; and Lord Lilford writes (Ibis, 1860, p. 342) as follows:—"Arrives in Corfu and Epirus in small numbers in March, remaining about a month in the low-lying maize-fields and vineyards; a few are always to be met with at that season in the Val di Roppa. I have occasionally killed this species in Epirus in September."

Professor von Nordmann speaks of it as being very common on the shores of the Black Sea, where in the spring it arrives soon after the Woodcock has passed; and he adds that it breeds in the marshy portions of Bessarabia.

I have no data as regards its occurrence in Asia Minor, where it is in all probability found

on passage or in winter; and Canon Tristram did not meet with it in Palestine; but it certainly occurs in North-east Africa, as I have a specimen from Alexandria, and it is recorded by Hemprich and Ehrenberg from Nubia. In North-west Africa it is more common than on the eastern side. It is recorded from Algeria by the travellers who have visited that country; and Mr. Tyrwhitt Drake, in his list of birds observed in Tangier and Eastern Morocco, states that he twice noticed it in March; but Favier (*fide* Colonel Irby) only mentions a single specimen as having been obtained by him near Tangier in 1859.

It is somewhat remarkable that the present species should be common in South Africa, whereas in North-east Africa, at least, it is only rarely met with; and I can only surmise that as it migrates during the night it thus passes through the northern portion of that continent without being much observed, and wintering in the south it remains longer in the same locality, and is consequently more frequently seen. Mr. Gurney (in Andersson's B. of Damara Land, p. 312) says that "Mr. Andersson's last collection contained a single specimen of this Snipe (a male), obtained in Ondonga on the 6th February, 1867. This species is a regular migrant to Natal, and also occurs, but less numerously, in the Republic of Transvaal; it arrives in Natal in September or October, and leaves in January or February;" and the same gentleman states (Ibis, 1868, p. 261) that, though not included in Layard's catalogue, it is a regular migrant to Natal, arriving in September and October, and leaving in January or February. Mr. Ayres has also met with it in the Transvaal, where, however, it is less common than in Natal.

To the eastward the present species occurs as far as Siberia.

Major St. John says that it is not unfrequently shot in Northern Persia about the beginning and end of the season. He once procured it there, but never saw it in the south. Dr. Severtzoff does not record it from Turkestan; but Dr. Radde writes that he met with it several times, early in September 1855, in the Kaja valley, near Irkutsk; on the 30th July, 1856, he met with one near Altansk, on the banks of the Aguzakan; and on the 31st he flushed several on the shores of the Dshindagatai lake, where it occurred together with *Scolopax stenura*. On the 20th April, 1858, he found it on the banks of the Amoor, in the Bureja Mountains.

I have had but few opportunities of observing the habits of the present species, my only acquaintance with it being restricted to having seen and shot a few individuals when a student in the vicinity of Upsala, where it was, during the time I was there, by no means uncommon. I am, however, indebted to my friend Mr. Robert Collett, of Christiania, for the following interesting notes, the result of personal observations made by him during his collecting-trips in various parts of Norway:—"The Double Snipe," he writes, "is chiefly a nocturnal bird. Not only does it migrate at night, but it is in motion almost solely after twilight, when its peculiar 'spil' or drumming takes place; and it also searches after food chiefly during this time of the evening, remaining quiet and hidden during the daytime, seldom or never taking wing unless flushed, but sitting well hidden amongst the dense grass. On the whole it is an unsociable bird; and although several pairs may inhabit the same meadow, yet each pair has its own small district, where they appear to take but little notice of their neighbours. They also rise singly; and it is one of the most uncommon occurrences if two are killed by the same discharge. It is not a shy bird, and may usually be approached within a few paces distance; and when it rises it flies but a short distance and drops again. When standing before the dog it does not crouch flat

down on the ground, but stands with its neck drawn in, the beak stuck out in front, immovable as a statue until flushed. When in search of food in the evening, it wanders about amongst the grass with outstretched neck, flies now and then a short distance, but usually traverses most of the distance on foot. With its soft pointed beak it easily finds all sorts of insects in the soft ground, probing here and there in search of food, which consists of small insects; and in places where it is common these probe-holes are to be seen everywhere. In its stomach I have generally found insect larvæ, small slugs, worms, &c., always more or less mixed with small stones, and sometimes with small pieces of grass bents, which, however, do not seem to form any portion of its food. As I have formerly stated, the intestines of specimens of this bird shot during the day-time are usually empty, as is also the case with the common Snipe and Woodcock.

"During the pairing-season the habits of this bird are very peculiar; for it has a so-called 'Leg' or 'Spil,' like some of the Grouse tribe, a sort of meeting-place, where they collect to 'drum,' and often to engage in combat for the possession of the females: and in this respect it differs widely from its allies; for it does not indulge in aerial evolutions, but remains on the ground. Though its habits are so peculiar at this season, they are, comparatively speaking, seldom observed, as its note, or song as it may be called, is very low in tone. This also is the only time when individuals of the Double Snipe collect together in small numbers. The drumming-place (Spil-plads) is usually in some damp place in the marsh where there is water between the tussocks; and the number of pairs resorting to the same drumming-place is usually eight or ten, frequently less, and sometimes more. In a large morass at Fokstuen, in the Dovre, where many birds which frequent the fells breed, especially *Totani*, *Tringæ*, and different Water-fowl, I have known the 'Spil' to consist of twenty pairs, and even more. Here the 'Spil' or drumming-season commences late in May, soon after the birds arrive, and lasts until the end of June, or until the females commence incubation. As soon as the dusk commences to set in, and whilst it is still tolerably light, the 'Spil' begins, and is continued throughout the night until the early morning. The male bird utters a soft, almost warbling note, which is accompanied by a peculiar snapping sound caused by striking the mandibles together several times in quick succession; and he then runs about in the grass in front of the females, jumps every now and again on a tussock, puffs out his feathers, and drops his wings. If a person approaches one of these drumming-places he can hear at some distance the low note *bip*, *bip*, *bipbip*, *bipbiperere*, *biperere*; and when within about a hundred paces, if the night is still, he begins to hear other peculiar sounds, which sometimes remind one of the distant cry of the common Sandpiper, and sometimes of that of the Redshank, and intermingled with these a peculiar hissing or piping note which seems almost incomprehensible. On approaching closer, the snapping sound is heard clearly, and the other whistling notes seem to become a regular song in short stanzas with variations, some of which are exceedingly well executed. When uttering these notes the bird is usually perched on a tussock, from which it occasionally jumps down and ascends another in the immediate vicinity; but as a rule it sits for long immovable on the same place, never, like the Golden Plover, on the highest tussock or mound it can find, but always on one of the smaller ones. Here it sits with the beak depressed without turning its head; and when the drumming commences it is begun by a whistling note or two; then comes the snapping note with five or six notes in rapid succession, and then a hissing sound, followed by a note

resembling the word *sbirrrr*, which note becomes deeper as uttered. When the bird commences its note the head is stretched upwards, and is held thus until the snapping commences, after which it is depressed. Whilst producing these notes the bird is in ecstacy, and raises and spreads its tail like a fan, the outer tail-feathers showing in the half-darkness like two white patches. At a short distance the sound of the notes of the different birds at the drumming-place resembles a low continuous chorus, and is by no means unpleasant; for it may be compared to the song of the Willow-Wren whilst a strong wind is sighing amongst the branches of the forest-trees.

"As soon as a couple of males approach each other they commence to fight, slashing each other feebly with their wings; but the combat does not last long. Whilst drumming they are not shy, and may be approached to within a few paces before they fly up; and even then they settle down again directly, and after a minute a two recommence proceedings; nor does the report of a gun seem to occasion much alarm. They drum during rainy weather, but seem to prefer clear, bright nights. During the darkest portion of the night they break up the 'Spil,' to recommence operations as soon as it becomes a little lighter. It is curious that the bird should have the power of uttering a song or a succession of notes so well developed, when during the rest of the year it is nearly dumb; for it only utters a harsh alarm-note when suddenly flushed, and has no regular call-note.

"The eggs of the Double Snipe, which, like those of its allies, are four in number, are deposited in June. It makes no regular nest, but the eggs are laid on a few grass bents in a mere depression in the soil, close to a tussock or under a small bush; and the bird sits so close that it will not leave its eggs until nearly trodden on, and will then return to the nest directly the intruder has left its immediate vicinity. As soon as the young are hatched they can run, and at once leave the nest."

Some interesting notes on the nidification of the present species in Northern Norway were published by Messrs. F. & P. Godman, who write (Ibis, 1861, p. 88) as follows:—"The first nest we found contained four eggs, and was placed on the edge of a small hillock, quite open, though there were dwarf birch trees growing all round, and one on the very hillock on which the nest was situated. It consisted of nothing more than a hole scraped in the moss, in which the eggs were deposited; there were neither grass nor leaves in it. After a minute examination of it, and carefully marking the place, we went away to fetch our guns, the rain descending in such torrents that we were not carrying them that day. On our return in half an hour the bird was again on the nest. We put it up and shot it. It proved to be a female. The eggs were very slightly incubated. The next day (June 25th) we found another nest within 200 yards of the former, containing only two eggs; and as we thought the bird would be sure to lay more, we marked the place and left it. It was situated on a small hillock, and in much the same sort of place as the former. We found another nest on the 27th of the same month. The bird fluttered off and ran away, dragging its wings on the ground, and making a sort of drumming noise. After taking four eggs from this nest, we returned to look at that found on the 25th, which contained two eggs. We walked directly to the spot; and what was our horror at seeing nothing in the place but some apparently disturbed moss! Our first impression was that the eggs had been destroyed by the Magpies or Crows that were constantly hunting for such food, or perhaps taken and eaten

by one of the many boys who wandered about the marsh tending cattle; but on our beginning to express our fears, the bird, doubtless frightened by our voices, flew up, leaving a hole in the moss, through which we could see there were still only two eggs as before. Not doubting, however, that the bird would yet lay more, we again left it, and returned in a couple of days. On approaching the spot, we observed the nest was again covered with moss. This time we remained for a minute before the bird flew off; and on stooping down to examine it more closely, we could distinctly see the bird's back through the moss. Not liking this close inspection, it flew up, and we took the eggs, which proved to be only within a day or two of hatching. The bird had evidently, after it was comfortably seated on the nest, torn up, with its long beak, the moss within its reach, and drawn it over its back, till it was completely covered in the way described: there was not the least appearance of any hole through which the bird could have crept into its nest. This circumstance of the nest being covered is still more curious, as out of six we found, it was the only one thus carefully concealed."

I possess several clutches of the eggs of the present species from Boel, in Jutland, and from the vicinity of Archangel, and do not find any very great variation either in coloration or size. They are pale olive-grey or stone-buff with an olive tinge in colour, marked with pale purplish grey underlying shell-blotches, and deep-brown surface-spots and blotches; some are but sparingly marked, whereas others are far more profusely blotched; and in all the markings are far more profuse at the larger end. In size they much exceed the eggs of the common Snipe, those in my collection varying from $1\frac{29}{40}$ by $1\frac{9}{40}$ to $1\frac{34}{40}$ by $1\frac{10}{40}$ inch.

Mr. Collett informs me that a clutch of eggs taken in Valders on the 21st June, 1873, measured—$44\times31$, $44\times32$, $43\times32$, and $44\times31\frac{1}{2}$ millims. respectively. In Norway eggs are found from the end of May to the commencement of July, but most seem to be deposited about the middle of June. Incubation lasts from about seventeen to eighteen days; and the young, when hatched, closely resemble those of the common Snipe, but have a shorter bill; and directly the tail commences to sprout, the white feathers on each side, so characteristic of this species, are visible. Usually the young birds are full-grown by the 1st of August; but occasionally some are unable to fly before the end of that month. In the autumn this bird is very fat, so much so that the thin skin on the breast, being tightly drawn on account of the increase in size of the bird, will break as the bird, when shot, falls on the ground.

The flight of the Double Snipe is swift, but differs from that of the common Snipe in being more direct and lacking the sudden jerk sidewards; and it is a much easier bird to shoot, as I well know from personal experience. Nor does it fly far when flushed, even when it has been fired at and missed, but generally drops again within a couple of hundred paces of where it was first found, if not nearer; and if driven away from a favourite locality, it soon returns to it again. When in search of the present species with a dog, it is always best to walk in a zigzag upwind as if tacking; and should there be suitable ground on each side of a small river, it is advisable for the party to divide and work each side, as, when flushed, the bird will frequently cross the water at once. Very small shot may be used in shooting this bird; for it is easily killed, and will drop when only very slightly wounded, and seldom or never runs when winged, but remains where it has fallen until retrieved, and a wounded bird is, as a rule, as good as bagged.

Mr. Collett informs me that in every portion of Norway the Double Snipe is decreasing

rapidly in numbers; and this decrease is perceptible both in its breeding-haunts and in the places which it frequents during passage. This circumstance is also remarked by Mr. Lindblad, who says that in Sweden it is far less numerous now than it used to be. Thirty or forty years ago it used to be exceedingly numerous in Upsala, so much so that in a couple of days in the autumn from 500 to 600 would be observed, whereas now one tenth of that number would be considered many. The only season of later years when it was very numerous was in 1847, when in less than one week about 500 were shot in the Kungsäng (king's meadow) at Upsala. This seems to be also the case in Northern Russia; for one of our leading Russian merchants, Mr. D. T. Morgan, assures me that about forty years ago when he was in North Russia he has known upwards of forty pounds weight of Double Snipe killed in one day near Archangel, where now this species, though not rare, is by no means so numerous.

The specimen figured is an adult male from Schleswig, in full breeding-dress, and is in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

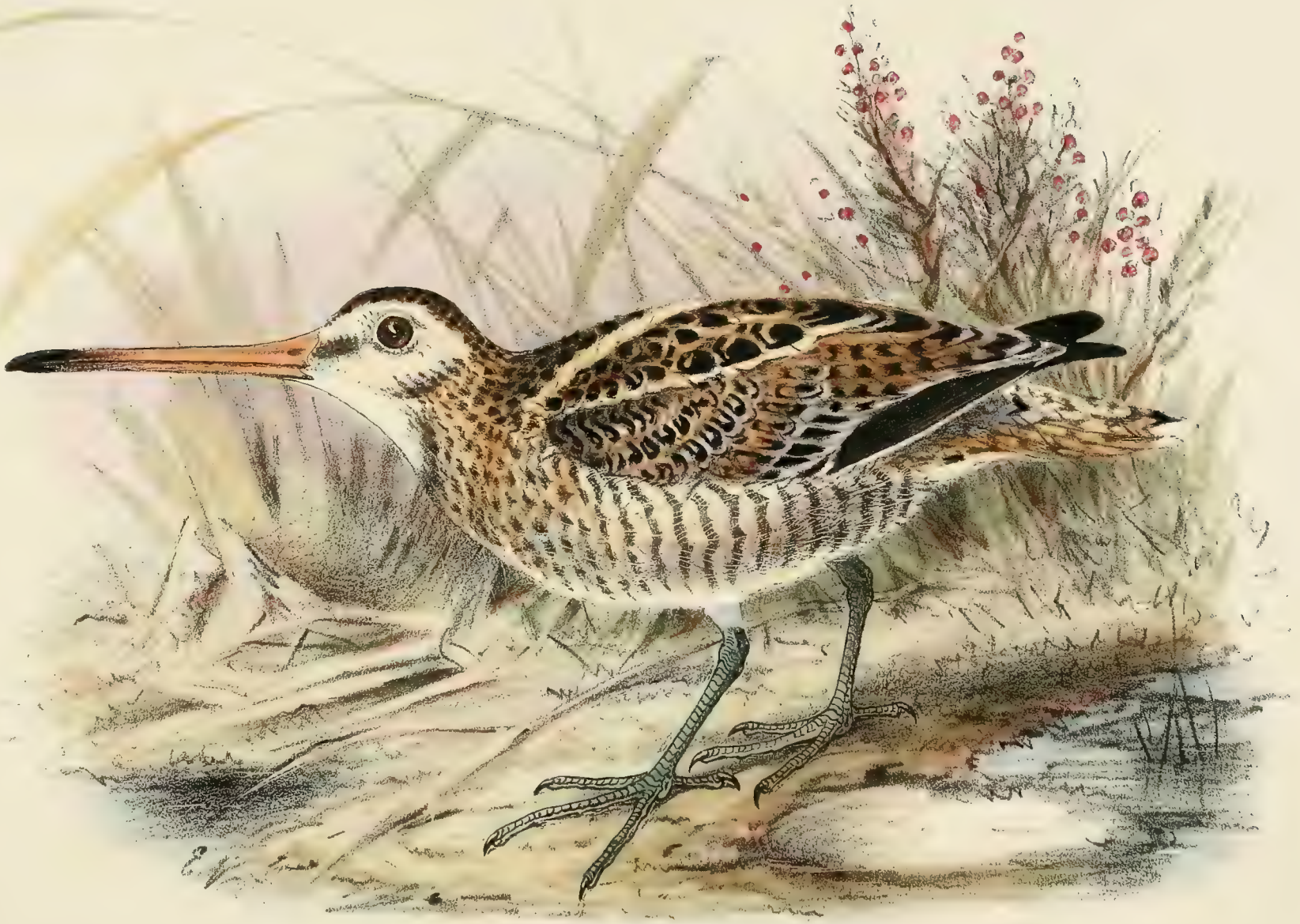
*a*, ♂. Schleswig, May 1867. *b*, *c*, *d*, ♂. Boel, Jutland, snared on the drumming-place. *e*, *f*, *g*, ♀. Boel, sent with eggs (*A. Benzon*). *h*, *juv.* Skara, Sweden, July 19th, 1870 (*Meves*). *i*, ♂. St. Petersburg (*Dode*). *k*, *pull.* Zastowa, Archangel, 1874 (*Piottuch*). *l.* Alexandria (*S. Stafford Allen*).

*E Mus. Howard Saunders.*

*a*, ♂ *ad.* Skara, June 22nd (*Meves*). *b*, ♂, *c*, ♀. Naples, April 1871 (*Professor Doderlein*). *d*, ♂. Valencia, October 9th, 1875 (*R. Martin*).

*E Mus. C. A. Wright.*

*a.* Malta. *b*, ♂. Malta, March 30th, 1864 (*C. A. W.*).

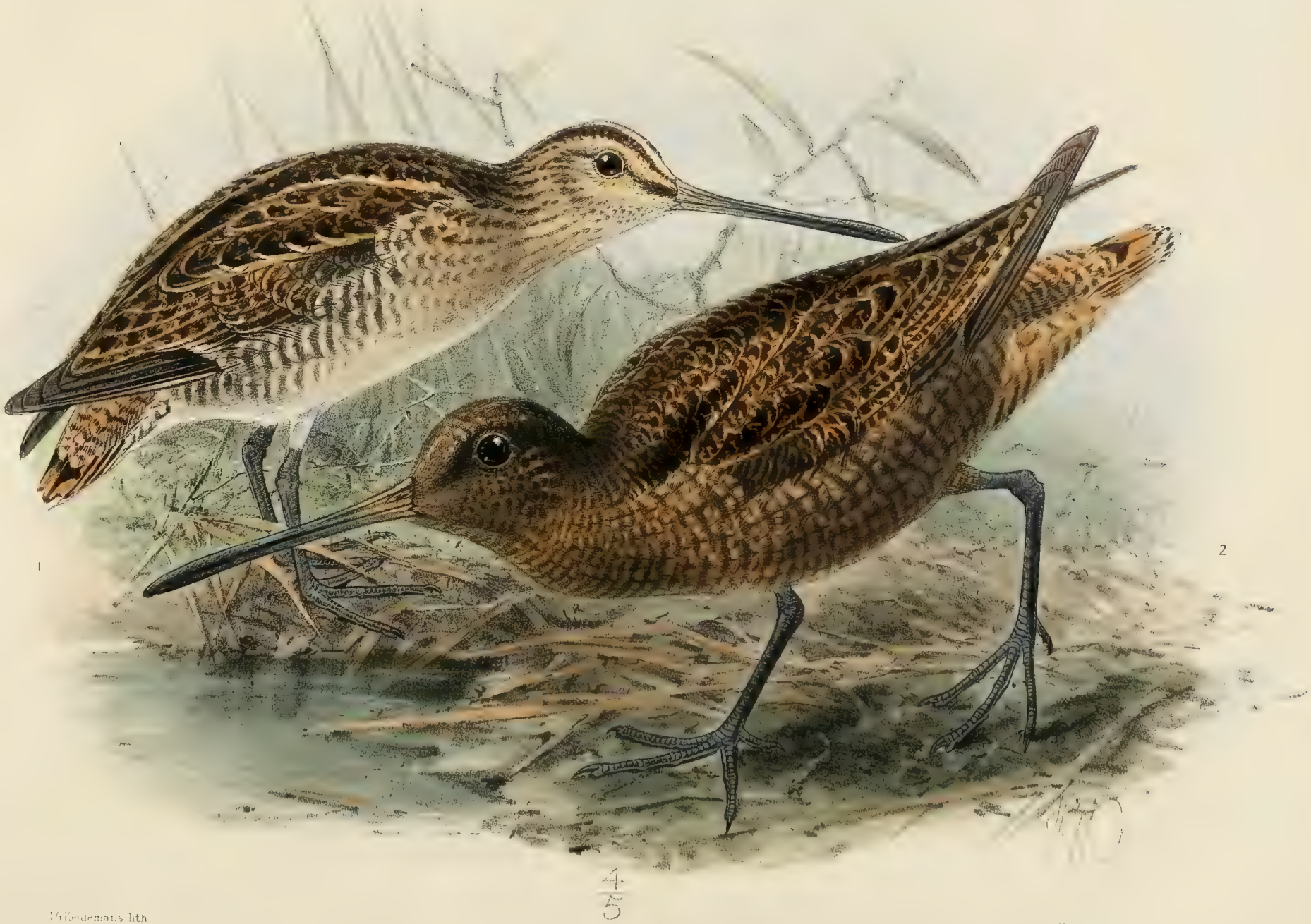


E.Neale lth

Hanhart imp

**COMMON SNIPE.**

GALLINAGO GALLINARIA.




4/5

J. Wolf & Sons lith.

Reinhart imp.

COMMON SNIPE.

1. ORDINARY FORM.

2. *var.* SABINEI.

# GALLINAGO CŒLESTIS.

(COMMON SNIPE.)

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*Scolopax gallinago*, Briss. Orn. v. p. 298 (1760).
*Scolopax gallinago*, Linn. Syst. Nat. i. p. 244 (1766).
? *Scolopax gallinaria*, O. F. Müll. Zool. Dan. Prodr. p. 23 (1776).
*La Becassine*, Buff. Hist. Nat. Ois. vii. p. 483, pl. xxvi. (1780).
*Scolopax cœlestis*, Frenzel, Beschr. der Vögel und ihrer Eier in der Gegend um Wittenberg, p. 58 (1801).
*Gallinago media*, Leach, Syst. Cat. Mamm. & B. Brit. Mus. p. 30 (1816, nec Fenzel, nec Bechstein, nec Schinz, nec Gloger).
*Scolopax sakhalina*, Vieill. Nouv. Dict. iii. p. 359 (1817).
*Scolopax media* (Leach), Vieill. Nouv. Dict. iii. p. 358 (1817).
*Scolopax brehmii*, Kaup, Isis, 1823, p. 1147.
*Scolopax sabinei*, Vigors, Trans. Linn. Soc. xiv. p. 557, pl. 21 (1825).
*Telmatias gallinago* (L.), Boie, Isis, 1826, p. 979.
*Pelorychus*, Kaup (*Scolopax brehmi*), Natürl. Syst. p. 119 (1829).
*Enalius*, Kaup (*Scolopax sabini*, Vig.), op. cit. p. 121 (1829).
*Telmatias faeroeensis*, C. L. Brehm, Vög. Deutsch. p. 617 (1831).
*Telmatias brehmii* (Boie), C. L. Brehm, op. cit. p. 618 (1831).
*Telmatias septentrionalis*, C. L. Brehm, op. cit. p. 619 (1831).
*Telmatias stagnatilis*, C. L. Brehm, op. cit. p. 618 (1831).
*Telmatias gallinago* (L.), C. L. Brehm, op. cit. p. 620 (1831).
*Telmatias peregrina*, C. L. Brehm, op. cit. p. 621 (1831).
*Gallinago brehmii* (Kaup), Bp. Icon. Faun. Ital. Ucc. Introd. (1832).
*Gallinago uniclavus*, Hodgs. J. As. Soc. Beng. vi. p. 492 (1837).
*Gallinago scolopacinus*, Bp. Comp. List, p. 52 (1838).
*Gallinago sabini* (Vig.), Bp. ut suprà (1838).
*Scolopax peregrina* (Br.), Temm. Man. d'Orn. iv. p. 435 (1840).
*Ascalopax sabini* (Vig.), Keys. & Blas. Wirbelth. Eur. pp. lxxvii, 216 (1840).
*Ascalopax gallinago* (L.), Keys. & Blas. ut suprà (1840).
*Enalius sabini* (Vig.), C. L. Brehm, Vogelfang, p. 304 (1855).
*Telmatias robusta*, C. L. Brehm, op. cit. p. 306 (1855).
*Telmatias salicaria*, C. L. Brehm, ut suprà (1855).
*Telmatias petenyi*, C. L. Brehm, ut suprà (1855).
*Telmatias lacustris*, C. L. Brehm, op. cit. p. 307 (1855).
*Telmatias brachypus*, C. L. Brehm, ut suprà (1855).
*Gallinago japonica*, Bp. Compt. Rend. xliii. p. 579 (1856).
*Gallinago nilotica*, Bp. ut suprà (1856).
*Gallinago burka*, Bp. ut suprà (1856).

*Gallinago lamottii*, Baill., fide Bp. Compt. Rend. xliii. p. 579 (1856).
*Gallinago pygmæa*, Baill., fide Bp. ut suprà (1856).
*Gallinago picta*, Hempr., fide Bp. ut suprà (1856).
*Gallinago ægyptiaca*, Aliq., fide Bp. ut suprà (1856).
*Gallinago* (*Spilura*) *japonica*, Bp., J. E. Gray, Hand-l. of B. p. 53. no. 10346 (1871).
*Telmatias sabinei* (Vig.), Rey, Syn. Eur. Brutvögel, p. 110. no. 432 (1872).
*Scolopax russata*, Gould, B. of Great Britain, Introd. p. 115 (1873).

*Croman loin*, *Naosg*, Gaelic; *Bécassine ordinaire*, French; *Narseja ordinaria*, Portuguese; *Agachadiza*, *Agachona*, Spanish; *Beccaccino reale*, Italian; *Choseh*, Arabic; *Bou-monkar*, Moorish; *gemeine Schnepfe*, *Moorschnepfe*, German; *Watersnip*, Dutch; *Dobbelt Bekkasin*, Danish; *Mujresnujpa*, Færoese; *Hrossagaukur*, *Myrisnipa*, Icelandic; *Enkelt-Bekkasin*, *Raagjeit*, Norwegian; *Enkel-Beckasin*, *Horsgök*, Swedish; *Taivaan-vuohi*, Finnish; *Bekass*, *Barachék*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 883; Werner, Atlas, *Gralles*, pl. 30; Kjærb. Orn. Dan. taf. 37; Frisch, Vög. Deutschl. taf. 229; Fritsch, Vög. Eur. taf. 37. fig. 7; Naumann, Vög. Deutschl. taf. 209; Sundevall, Svensk. Fogl. pl. 44. fig. 2; Gould, B. of Eur. pl. 321; id. B. of G. Brit. iv. pl. 79; Schlegel, Vog. Nederl. pl. 222; Roux, Orn. Prov. pl. 301.

*Ad.* pileo nigro-fusco, centraliter lateraliterque cervino striato: corpore suprà nigro, rufo et rufescente cervino variegato et striis lateralibus quatuor longitudinalibus cervinis: remigibus nigro-fuscis, primario externo extùs cervino marginato: tectricibus alarum albido terminatis et vix fasciatis: uropygio et supracaudalibus rufescenti-cervinis nigro marmoratis: rectricibus lateralibus rufescenti-cervinis nigro fasciatis, centralibus nigris rufescenti terminatis nigroque marmoratis et fasciatis: loris nigricantibus: collo et pectore superiore cervino-albidis nigro variegatis: hypochondriis et axillaribus albis nigro fasciatis, illis cervino tinctis: subcaudalibus cervinis nigro fasciatis: rostro ad basin pallidè rufescente, versus apicem fusco: pedibus viridi-griseis: iride nigro-fuscâ.

*Adult Female* (Spain, January). Crown blackish brown with a broad central and two lateral buffy lines; upper parts black varied with rufous and warm buff. the buff collecting so as to form long lines on each side of the back; quills blackish, the first quill margined externally with buffy white; wing-coverts tipped and slightly barred with dull white; rump and upper tail-coverts rufous buff barred with blackish; central rectrices black tipped with rufous, marbled and barred with black; lateral rectrices rufous buff barred with blackish; lores blackish; neck, throat, and upper breast buffy white varied with blackish; flanks and axillaries white barred with blackish, the former tinged with buff; under tail-coverts warm buff barred with blackish; bill pale reddish brown at the base, dark brown at the end; legs dull pale greenish; iris deep brown. Total length about 10·5 inches, bill 2·9, wing 5·1, tail 2·4, tarsus 1·4, middle toe with claw 1·5.

*Adult Male.* Closely resembles the female, but is rather smaller in size.

*Obs.* In the spring the plumage differs from that worn in the autumn by the wing-feathers having the pale margins worn off, making the wing appear much darker, and the long stripes on the back are paler and more ochreous in tinge. In immature dress the general plumage is duller, and the legs are stouter, softer, and rather paler, the bill also being much softer than in the adult.

I have been considerably exercised as regards the proper specific appellation to be used for the present species. At first I thought that *gallinaria* of O. F. Muller could be used; but the description is so very defective that it must be rejected altogether. Indeed it appears not improbable that the bird he described may have been an immature Ruff. As there can be no doubt that the species to which Frenzel gives the name of *Scolopax cœlestis* is our Common Snipe, I see no alternative but to use that name, and therefore call it *Gallinago cœlestis*.

The Common Snipe is found throughout Europe and Asia, ranging southward into North Africa, the islands in the Bay of Bengal, and the Philippines. In America the common European Snipe is replaced by a very closely allied species, *Gallinago wilsoni*.

In Great Britain *Gallinago cœlestis* breeds in almost every part where there are suitable localities, from the north of Scotland down to the counties bordering the English Channel. Yarrell says that it breeds in Cornwall and Devonshire, and he has received the eggs from Dorsetshire and the New Forest, in Hampshire; and Captain Feilden informs me that a few pairs breed annually in Woolmer Forest. He did not find the nest this year (1879), but saw and heard the birds drumming during the spring. As may be supposed from the nature of the country, the Snipe breeds not uncommonly in Norfolk and Lincolnshire, but not so numerously as it formerly did previous to the draining of the large fens; it nests also on many of the moors in the north of England. In Scotland, according to Mr. Robert Gray, the Snipe is an abundant species all over the western counties and both groups of islands, and it nests commonly in the north and some parts of the east of Scotland. Owing probably to the boggy nature of the country, the Common Snipe is much more abundant in Ireland than in Scotland or England, and to some extent is a resident in that island. In England and Scotland it is also indigenous, and is found at all seasons, though, to a large extent, it changes its place of residence at different seasons of the year; and in the autumn its numbers are considerably augmented by migrants, which probably come from Scandinavia.

Professor Newton says that it has been so often observed in Greenland that it very likely breeds there. It is fairly abundant in suitable localities in Iceland. According to Faber it arrives the last week in April, and leaves about the middle of October, though a few probably remain through the winter; for he saw three at a warm spring in hard frost on the 3rd February 1821. It nests numerously in the Færoes; and a considerable number remain there during the winter.

In Norway, Mr. Collett informs me, the Common Snipe is generally distributed throughout the country, although more sparingly on the west coast. In the northern districts it is met with numerously, both on the mainland and the islands; but in Southern Norway it is chiefly found in the subalpine and alpine regions, and during migration in the lowlands. On the flat portions of the Hvalöer islands it breeds abundantly. It winters in Western Norway, as, for instance, at Bergen and Hardanger.

In Sweden this Snipe is more or less numerous in the central and southern provinces, but becomes rarer in the north. It arrives in Skåne in March, the males preceding the females, and leaves late in September or in October, a few remaining in Southern Sweden over the winter.

I frequently met with the Common Snipe in Finland, where, according to Palmén (Finl.

Fogl. ii. p. 239), it is very generally distributed, but becomes rarer in the north above the Lapland frontier, though it breeds up to about 69° N. lat. This gentleman, who gives a detailed account of its range in that country, says that it arrives in Southern Finland about the end of April, but does not reach Lapland before the end of May or the commencement of June. In the autumn it leaves late in August or early in September, a few remaining in Southern Finland up to the end of the latter month. I have received many specimens, both of birds and eggs, from Archangel; Messrs. Seebohm and Harvie-Brown met with it on the Petchora, where it was, they say, rather abundant at Habariki in the beginning of June; and they likewise traced it down to the head of the delta, where it was much scarcer than *Gallinago major*. They did not see it at Alexievka, nor elsewhere upon the tundra.

In Central Russia the Common Snipe is very generally distributed, and Bogdanoff says that it breeds in the Saratoff district. In the Ural it is more numerous than the Double Snipe; and Artzibascheff states that it is abundant on the Sarpa, especially on passage.

According to Mr. Taczanowski the Common Snipe is numerous throughout Poland, arriving about July and remaining until driven south by the snow and frost; a few stragglers occasionally remain over the winter. In all parts of North Germany where suitable ground is to be found this Snipe breeds, in larger or smaller numbers, and in many places it is also met with throughout the winter.

This is the commonest of the Snipes in Denmark, both on passage and during the breeding-season. The major portion arrive late in March, and leave about the end of September or in October; but some few remain over the winter, especially in mild seasons, and in places where there are springs which keep the water from freezing. In the Rhenish provinces in Western Germany, Mr. Carl Sachse informs me, the Snipe passes in the spring about the middle of March, and again in the autumn late in September or early in October; but few remain to breed in the lowlands, though in the elevated plateaux of the Westerwald (where there is plenty of marshy ground) numbers remain to nest, and he found fresh eggs there late in March and early in April. Some, but not many, remain throughout the winter. In Holland, Belgium, and France it is chiefly found in the two seasons of passage, from August to October and in March and April; but a few remain to nest in North Brabant and Groningen and in South Holland, and some nest also in portions of France. In Southern France large numbers winter in the larger marshes. It is common in Portugal, and winters abundantly in Spain. Colonel Irby says (Orn. Str. Gibr. p. 175), it is "plentiful from October to February on the Spanish side of the Straits; and although better sport is to be had with this (in a sporting sense) king of birds on the Moorish side, the amusement is, as has been already stated, greatly reduced by the want of accommodation and utter absence of comfort; not that there is much of the latter in many places on the Andalucian side. At Casa Vieja, Snipe sometimes arrive as early as the beginning of September. I have heard of a straggler during August; but the greater quantity do not put in an appearance till the end of October and the first week in November. They commence their departure in March; and by the first week in April all have disappeared except a stray loiterer, perhaps a wounded bird. I once noticed one as late as the 3rd of May, having observed it for several days previously in the same situation, and would not shoot it, as I wished to see how long it would remain: this bird did not appear to have any thing the matter with it.

I never heard the drumming noise of the Snipe in Andalucia—though at home in England I have occasionally heard them drumming of an evening in the New Forest as early as the 20th of January, the weather then being unusually mild, and the place where I heard them being their regular nesting-ground. I have often noticed that, in the marshes both in Morocco and Andalucia, the best ground for Snipe was a spot where sedges and rushes had been burnt during the summer; but the consequent absence of cover in these places rendered it useless to try and walk up to the birds, and the only way was to stand or sit perfectly still in the most favourite spot and await their return. I have more than once taken a chair down, and sat in it, waiting for their flight overhead, much to the astonishment of the native population, who could not understand such a proceeding."

In Savoy it occurs on passage in the spring and autumn; and in Italy it is tolerably, and at times very abundant during the autumnal migration. It is supposed to have bred in some of the northern provinces; but there does not appear to be any proof that its nest has been found there. It is more numerous on passage than at other seasons in Sardinia, and is extremely abundant in the marshes round Oristano and Cagliari, some remaining throughout the winter in swampy localities. Mr. C. Bygrave Wharton says (Ibis, 1876, p. 27) that the Common Snipe is very numerous during the winter in Corsica; a few were seen on the west coast in March; and two were seen at Biguglia in the middle of April.

In Southern Germany *Gallinago cœlestis* is said to be much rarer than in Northern Germany. Dr. Fritsch says that only stragglers occur in Bohemia. It has, he says, been obtained near Podebrad, Pardubic, Königgratz, Trauenberg, &c.; but he never saw it offered for sale in the Prague market. Mr. Seidensacher says that it appears near Cilli, in Styria, late in August, and a few remain there throughout the winter; and in Austria and Hungary it breeds in swampy localities, and remains singly over winter in open places, but is by far most numerous on the two seasons of passage. In Southern Russia it occurs chiefly on passage; but Mr. Goebel says (J. f. O. 1871, p. 139) that he found it breeding in the large marshes of Krasnosteno and Sokolow (in the Northern Uman district). In 1868 three individuals remained all the winter at a warm spring near Uman. In Turkey and Asia Minor it is found in some numbers in the winter; and Dr. Krüper speaks of it as being abundant near Smyrna. This gentleman says also that it is common in Greece, and has been observed as late as the end of May in the marshes of Marathon, but it is not known to have bred there. Lord Lilford informs me that he found a few Snipes in the marsh at Suda Bay, in Crete, in April 1875, and a small sprinkling in various places in Cyprus later in the same year. The last he observed was seen near Limasol in May. Canon Tristram met with the Common Snipe in Palestine; and in North-east Africa, according to Von Heuglin, it appears in great numbers in the spring and autumn in Lower and Central Egypt, where it is found on the banks of lagoons, in swampy meadows, canals, ponds, &c. &c. In the winter it passes further south, to the White and Blue Nile and Abyssinia. In October he met with it at the springs of Dobar, in the Somali country, and in the spring in Arabia Petræa. In Lower Egypt stragglers are now and again seen in the summer. Blanford found it common in the winter in the highlands of Abyssinia; and it was tolerably numerous near Lake Ashangi as late as the commencement of May. Captain Shelley says (Birds of Egypt, p. 249):—"The Common Snipe ranges throughout Egypt and Nubia, and is very abundant wherever there is suitable

ground for it, as, for instance, throughout Lower Egypt, the Fayoom, and around the lake near Erment. There are perhaps few localities better suited to this bird than the large marshes of Lower Egypt, where, in February, I have killed over forty couple in a day. By the end of that month their numbers rapidly decrease; yet towards the end of March I one day killed twenty couple in the same marsh. Up the Nile at Dendera I have met with them as late as the 24th of March."

According to Loche, *Gallinago cœlestis* is tolerably numerous in Algeria from November to March, and straggling pairs have even been known to remain there to breed; and Mr. Taczanowski remarks that it appeared to be most abundant in the valley around Lake Fezzara near Constantine. Mr. C. F. Tyrwhitt Drake found it common in Eastern Morocco; and Favier observes that around Tangier it is very plentiful from October until February. It appears to range as far south as Gambia; but in Southern Africa it is replaced by a tolerably closely allied form, *Gallinago æquatorialis*, Rüpp. Our Common Snipe, however, inhabits Madeira, the Canaries, and the eastern, central, and western groups of the Azores; and Mr. Godman says that he saw four or five examples in a marsh at Flores which he fully believes were breeding there, though he did not succeed in finding a nest.

In Asia the common European Snipe is found as far east as Japan. Mr. Blanford, who met with it in Persia, says (E. Pers. ii. p. 282):—"It is common in winter in suitable localities. I saw three or four, and shot a couple on the 2nd of May at Hanaka, near Karmán, at about 8000 feet above the sea. The birds may have been in their breeding-haunts; but it is just as possible that they were merely halting during migration; for some do not leave the tropical swamps of India before the beginning of May." According to Dr. Severtzoff it is found on passage and in the winter in some parts of Turkestan, and breeds also in some portions of the country; in Eastern Turkestan, Mr. Scully says, it is tolerably common in the neighbourhood of Yarkand in the summer, and breeds there, but never remains in the winter. Referring to its occurrence in India, Dr. Jerdon writes (B. of India, iii. p. 675):—"Both the present species and *Gallinago stenura* are very abundant in India during the cold weather, and are not, in general, discriminated by sportsmen. Snipe arrive in the north of India in small numbers early in August, but not in any quantity till the end of September and October. A few are generally found in the Calcutta market early in August, and in the Madras market by the 25th of the same month; the last birds do not leave before the first week of May. In Upper Burmah, where I noticed the very early appearance of the common Swallow, Snipe came in small numbers towards the middle or latter end of July; but I very much doubt their breeding there, or in the marshes of Bengal, as Adams states that they do. They frequent marshes, inundated paddy-fields, rice stubble-fields, edges of jheels, tanks, and river-courses, feeding, chiefly at night, on worms and various aquatic insects. Their pursuit is a favourite sport throughout India; and vast numbers are occasionally killed. I have heard of 100 couples having been killed to one gun in the south of India; and 60 or 70 brace is no very uncommon bag for a first-rate shot in some parts of the country." It is found in Ceylon in winter, and is stated to be very common in the swamps about Aberdeen, in the Andaman Islands. The Common Snipe is met with generally throughout Siberia. Von Middendorff found it breeding abundantly on the Boganida, where he first observed it on the 27th May, and on the 21st June

he found a nest containing eggs. He saw it late in April on the western slope of the Stanowoi Mountains, and shot one at Udskoj-Ostrog on the 29th August. Both Von Middendorff and Dr. Radde also met with it in the portions of Eastern Siberia visited by them; and according to Colonel Przevalsky it breeds, though rarely, in the Hoang-ho valley, and probably also in South-eastern Mongolia, where large numbers were seen on passage from about the 10th of April to the middle of May. He only once saw it in Kan-su, in September; and at Koko-nor the first appeared on migration on the 23rd March, and by the end of that month they were very numerous. This Snipe was not seen by Colonel Przevalsky when crossing the Gobi desert; but at Lake Hanka it appeared early in April. Père David says that it is quite as numerous in China as it is in Europe, and is very abundant near Pekin in the spring and autumn; and both Mr. Whitely and Captain Blakiston obtained it at Hakodadi, Japan. In the winter season the Common Snipe ranges south to the Philippines; and the late Lord Tweeddale writes that Dr. Meyer obtained two examples at Luzon.

In North America *Gallinago cœlestis* is replaced by a very closely allied species, *Gallinago wilsoni*, which differs merely in having the outer rectrices much narrower, and the axillaries, as a rule, more closely barred with black.

In habits the Common Snipe is, as a rule, a somewhat shy and wary bird, and especially in stormy, bad weather it is difficult to approach within gunshot range; but in fine, clear, still weather it appears to be less shy. During the daytime it is but seldom seen, unless flushed from its hiding-place; but in the early morning and late evening it becomes restless, leaves its retreat, and commences hunting round after food. So far as I can ascertain, it but seldom moves from its resting-place during the day, but feeds almost exclusively in the early morning, at twilight, or during the night. When flushed it rises suddenly, often uttering a short sharp note resembling somewhat the tearing sound caused by drawing the nail sharply over a piece of silk drawn tight, and flies off very swiftly, at first irregularly, and then more in a straight line. It is generally not gregarious, and is flushed singly; but during the seasons of migration small flocks are sometimes seen, and I have occasionally seen a considerable number collected together in a small swampy patch. It frequents marshy or grassy localities, often on the banks of small streams, and especially places where the soil is soft, where it can easily probe in search of food. Like the Woodcock it evinces a partiality for some particular spot; and most sportsmen can remember some favourite place where a Snipe may almost invariably be flushed during the shooting-season. I well recollect a little patch of grass-covered swamp near San Antonio, in Texas, where almost every morning soon after daybreak I was sure to find one or two of the American form, *Gallinago wilsoni*; and during the season I spent there I killed a considerable number at that place alone. Formerly when so much of the country in Norfolk now under cultivation was undrained, large bags of Snipe used to be made; and Mr. Stevenson states that about eighteen years ago Captain Rous killed over forty couple to his own gun in one day at Sutton; and as late as 1859 or 1860, when the birds which arrived in November were met by a severe frost, Lord Leicester killed seventy or eighty couple in one day near Holkham; but now it is very rare to bag more than from five to ten couple in a day.

The food of the Common Snipe consists entirely of worms and insects of various kinds, and minute shells; and though it is said occasionally to swallow vegetable substances, this is probably

not done designedly. Bechstein certainly states that it will occasionally eat blueberries; this would appear to be incorrect. When feeding it probes the mud by thrusting its bill in quite up to the base and withdrawing it quickly; and the bill, which when the bird is alive has the terminal portion soft and pulpy, is evidently designed to assist the bird in feeling, as it were, for its food. Soon after death, however, its bill becomes pitted or dimpled like the end of a thimble.

The Snipe commences nidification early; and eggs may be found from the first week in April, though, as a rule, the first eggs are laid about the middle of that month. Towards the third week of March the pairing-season commences; and then the strange drumming or bleating note indicative of the breeding-season may be heard. This peculiar note is always emitted when the bird is on the wing; and from its resemblance to the bleating of a goat or the neighing of a horse the bird has in France obtained the name of "Chèvre volant," in Sweden "Horsgök," in Denmark "Hingstefugl," and in Germany "Himmelsgeiss" (hence the name given it by Frenzel) and "Haberbock" amongst the peasantry. It was long a disputed point as to how this sound is produced; but it appears to be now tolerably certain that the sound proceeds from the external tail-feathers. Mr. Meves, who found out that this sound is generated by the action of the air on these stiff feathers as the bird descends rapidly when going through its course of aërial evolutions, showed me exactly how he made the discovery; and the apparatus he had constructed gave the sound with striking fidelity. An excellent translation of Mr. Meves's remarks on the subject was published by the late Mr. John Wolley (P. Z. S. 1858, p. 199), which I transcribe as follows:—"On the origin of the neighing sound which accompanies the single Snipe's (*Scolopax gallinago*, L.) play—flight during pairing-time—opinions are various. Bechstein thought that it was produced by means of the beak; Naumann and others, again, that it originated in powerful strokes of the wing; but since Pralle in Hanover observed that the bird makes heard its well-known song or cry, which he expresses with the words '*gick jack, gick jack*!' at the same time with the neighing sound, it seemed to be settled that the latter is not produced through the throat. In the mean time I have remarked with surprise, that the humming sound could never be observed whilst the bird was flying upwards, at which time the tail is closed, but only when it was casting itself downwards in a slanting direction with the tail strongly spread out.

"The peculiar form of the tail-feathers in some foreign species nearly allied to our Snipe (for example, *S. javensis*) encouraged the notion that the tail, if not alone, at all events in a considerable degree, conduced to the production of the sound. On a closer examination of the tail-feathers of our common species, I found the first (outer) feather, especially, very peculiarly constructed:—the shaft uncommonly stiff, sabre-shaped; the rays of the web strongly bound together and very long, the longest reaching nearly three fourths of the whole length of the web, these rays lying along (or spanning from end to end of the curve of) the shaft, like the strings of a musical instrument. If one blows from the outer side upon the broad web it comes into vibration, and a sound is heard which, though fainter, resembles very closely the well-known neighing.

"But to convince one's self fully that it is the first feather which produces the peculiar sound, it is only necessary carefully to pluck out such a one, to fasten its shaft with fine thread to a piece of steel wire a tenth of an inch in diameter and a foot long, and then to fix this at

the end of a 4-foot stick. If now one draws the feather, with its outer side forward, sharply through the air, at the same time making some short movements or shakings of the arm so as to represent the shivering motion of the wings during flight, one produces the neighing sound with the most astonishing exactness.

"If one wishes to hear the humming of both feathers at once, as must be the case from the flying bird, this also can be managed by a simple contrivance. One takes a small stick, and fastens at the side of the smaller end a piece of burnt steel wire in the form of a fork; one binds to each point a side tail-feather; one bends the wire so that the feathers receive the same direction which they do in the spreading of the tail as the bird sinks itself in flight; and then with this apparatus one draws the feathers through the air, as before.

"Such a sound, but in another tone, is produced when we experiment with the tail-feathers of other kinds of Snipe. But in *S. major*, *capensis*, and *frenata* are found four humming-feathers (*surr pennor*) on each side, which are considerably shorter than in the species we have been speaking of. *Scolopax javensis* has eight on each side, which are extremely narrow and very stiff.

"Since in both sexes these feathers have the same form, it is clear that both can produce the humming noise; and by means of experiment I have convinced myself that it is so. But as the feathers of the hen are generally less than those of the cock bird, the noise also made by them is not so deep as in the other case. Professor Nilsson announces that in the female of the Single Snipe a neighing noise has been already observed.

"It would be interesting if travelling ornithologists would in future make observations on the foreign species in a state of nature. It ought to be found that these also have a neighing or humming noise, but differing considerably from that of our species.

"Besides the significance which these tail-feathers have as a kind of musical instrument, their form may give a very weighty character in the determination of species standing very near one another, which have been looked upon as varieties."

The nest of the Snipe is very simple, being merely a well-rounded depression in the ground, usually amongst the grass or in a bunch of rushes, and lined with grass bents. The eggs are almost always four in number, or in late layings only three; and these are placed with the points towards the centre. They are pyriform in shape, and are large for the size of the bird, those in my collection measuring from $1\frac{2}{40}$ by $1\frac{1}{40}$ to $1\frac{2}{40}$ by $1\frac{6}{40}$ inch. In colour they vary from pale stone greenish to greenish buff, and are spotted and blotched with pale dull purplish grey underlying shell-markings, and rich dark umber-brown overlying surface-blotches and spots; and all are much more heavily blotched at the larger end. Incubation lasts about sixteen days, the female alone sitting; when the young are hatched they are soon able to shift for themselves and run about, and are especially clever in hiding should danger threaten them. At first they are covered with soft down all over; but in about ten days the wing- and tail-feathers begin to sprout, and soon all the body is covered with feathers, the head and neck alone being still in the down dress. The underparts are then much more profusely and boldly barred than in the adult, and the lower abdomen and thighs are still covered with down. The parent birds are said to tend their young with considerable care until they are able to fly, when they leave them altogether to shift for themselves.

A somewhat peculiar habit of the Snipe, which has given rise to considerable discussion, is that of its occasionally perching on fences or trees. Mr. Stevenson, who says that he believes that this habit is confined entirely to the breeding-season, gives instances of Snipes having been seen to perch on a notice-board, the branch of a tree, a flagstaff, &c.; and Messrs. Seebohm and Harvie-Brown write (Ibis, 1876, p. 310):—"We were not a little surprised when we first became acquainted with the arboreal habits of the Snipe at Habariki, and saw one of those birds perched, seventy feet from the ground, on the topmost upright twig of a bare larch, where, one would have thought, it could scarcely find sufficient foothold. With its head lower than its body and tail, it sat there, uttering at intervals the curious double 'clucking' note, *tjick-tjuck*, *tjick-tjuck*, whilst others of the same species were 'drumming' high in air over the marsh. To put all beyond a doubt, Harvie-Brown shot one in this peculiar position. Nor is the Common Snipe the only bird which, not practising the habit with us, we found perching freely in Northern Russia: the Snow-Bunting and Pipits have already been instanced; and we may also mention the Common Gull, as will be seen under the notice of that species further on. The Curlew also was seen to perch on bushes and trees at Sujma, near Archangel, by Alston and Harvie-Brown in 1872 (Ibis, 1873, p. 70). There can be little doubt, we imagine, that this habit was induced in the first instance by the flooding of great tracts of country by the annual overflow of the rivers in spring, just at the time of the passage of the migratory flights, and, further, that what was originally forced upon them has become, by use, a favourite habit."

The Common Snipe is subject to considerable variation both in size and coloration, and, curiously enough, also in the number of the tail-feathers. As a rule, the number of rectrices varies from fourteen to sixteen; but sometimes this bird is said to have only twelve. The tail is usually considerably rounded; but in some very large rufous dark-coloured examples the lateral rectrices are much longer than usual, giving the tail a square appearance. This form has been described as distinct by Gould under the name of *Gallinago russata*. Kaup (*l. c.*) described under the name of *Scolopax brehmii* the form with sixteen tail-feathers as distinct; but it is now generally conceded that this form is not deserving of specific rank. Pale varieties of our Common Snipe are sometimes met with, but are of rare occurrence. Mr. Stevenson mentions a pure white one, and one which on a pure white ground had the usual markings delicately traced in light and dark shades of buff; and Mr. J. H. Gurney, jun., records (Zoologist, 1868, p. 1459) a fawn-coloured variety. The most peculiar and one of the rarest is a melanoid variety which has been raised to specific rank under the name of *Scolopax sabinii*, and which is even now by some naturalists considered to be distinct from our Common Snipe. So far as I can ascertain, however, I quite agree with Professor Newton that it is merely a melanism of the Common Snipe, and probably a bird of the year, which accounts for the peculiarity remarked by Mr. Harting, viz. that the feathers of the back are more ovate than in ordinary adult examples of *Gallinago cœlestis*. I have carefully examined the specimens which Mr. Harting had; and I am indebted to my friend Mr. W. E. Gumbleton for the loan of a very fine specimen, which has been used in the illustration of this form given herewith. This bird was shot by Mr. John E. Barrett, of Carrieganass Castle, Bantry, who, on being applied to for particulars, wrote, "I shot the Snipe in one of the small bogs in Whiddy Island, Bantry Bay, in January 1868 or 1869. On getting up before my pointer, it seemed to fly more steadily and slowly than the Common

Snipe—so much so that I at first thought it was a Water-Rail, and let it go a long way before I fired. Mr. John Warren Payne, of Beach House, Bantry, was with me at the time; and as he expressed a wish to add it to his collection, I gave it to him."

It is somewhat remarkable that Sabine's Snipe has, with one exception, not been known to occur out of the British Islands; and even here it is extremely rare. Mr. Harting, in the 'Field' of December 10th, 1870, gave a list of twenty-four occurrences recorded up to that date, the specimen from Bantry Bay not being included in it; and Mr. Harting also states (Handb. Brit. B. p. 52, footnote) that one now in the British Museum was shot near Paris by a friend of the late M. Jules Verreaux. I may remark that examples of Sabine's Snipe vary considerably *inter se* in tone of colour, some being very much darker than others—which tends also to prove that it cannot be a distinct species, but only a dark variety. It has been obtained in England and Ireland; but, so far as I can ascertain, it has not yet been recorded from Scotland.

The specimens figured are:—on one Plate a very pale-coloured example from Asia Minor; and on the second Plate an ordinary rather dark bird from England, and a specimen of the dark form usually called Sabine's Snipe.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Leadenhall Market. *b, juv.* Stoneyhurst, Lancashire, May 20th, 1873 (*Baron von Hügel*). *c, juv.* Altenkirchen, near Coblentz (*Sachse*). *d*, ♀. Near Seville, Spain, January 12th, 1872 (*Colonel Irby*). *e*, ♀. Archangel, June 18th, 1877 (*Piottuch*). *f*, ♂. Smyrna, January 10th, 1866. *g*. East of Chauda, February 26th, 1870 (*W. T. Blanford*). *h*, ♂. Yokohama, Japan, February 10th, 1870 (*Captain Conrad*).

*E Mus. H. Seebohm.*

*a, b*, ♂. Heligoland, November 1877 (*Gätke*). *c*, ♂. Moscow, September 20th, 1869 (*J. H. Gurney, Jun.*). *d*, ♀. Yennesei, East Siberia, June 9th, 1877 (*H. Seebohm*). *e*, ♂. Yennesei, June 14th, 1877 (*H. S.*).



J. G. Keulemans Lith.

M&N Hanhart imp.

JACK SNIPE.
GALLINAGO GALLINULA.

# GALLINAGO GALLINULA.

(JACK SNIPE.)

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*Scolopax gallinago minor*, Briss. Orn. v. p. 304, pl. xxvi. fig. 2 (1760).
*Scolopax gallinula*, Linn. Syst. Nat. i. p. 244 (1766).
*La petite Bécassine*, Buff. Hist. Nat. Ois. vii. p. 490 (1780).
*Gallinago minima*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 31 (1816).
*Lymnocryptes*, Kaup (*Scolopax gallinula*, Linn.), Natürl. Syst. p. 118 (1829).
*Gallinago gallinula* (L.), Bp. Comp. List, p. 52 (1838).
*Philolimnos gallinula* (L.), C. L. Brehm, Vög. Deutschl. p. 623 (1831).
*Philolimnos stagnatilis*, C. L. Brehm, op. cit. p. 623 (1831).
*Philolimnos minor*, C. L. Brehm, op. cit. p. 624 (1831).
*Ascalopax gallinula* (L.), Keys. & Blas. Wirbelth. Eur. p. 77 (1840).
*Telmatias gallinula* (L.), Droste, Vog. Bork. p. 234 (1869).
*Lymnocryptes gallinula* (L.), G. R. Gray, Hand-l. of B. iii. p. 53 (1871).

*Bécassine sourde*, French; *Narseja pequena*, Portuguese; *Frullino*, Italian; *Halbschnepfe*, *kleine Bekassine*, *stumme Schnepfe*, German; *Bokje*, Dutch; *Stum-Bekkasin*, *Buk*, Danish; *Halvenkelt-Bekkasin*, Norwegian; *Halfenkel-Beckasin*, *Hårsnäppa*, Swedish; *Pieni-kurppa*, *Pienempi taivaan-jaara*, Finnish; *Bekass-stooshik*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 884; Werner, Atlas, *Gralles*, pl. 31; Kjærb. Orn. Dan. taf. 37; Frisch, Vög. Deutschl. taf. 231; Fritsch, Vög. Eur. taf. 37. fig. 9; Naumann, Vög. Deutschl. taf. 210; Sundevall, Svensk. Fogl. pl. 44. fig. 4; Gould, B. of Eur. pl. 322; id. B. of G. Brit. iv. pl. 81; Schlegel, Vog. Nederl. pl. 223.

♂ *ad.* striâ frontali, pileo et nuchâ centraliter, striâ superciliari utrinque ad nucham productâ et loris nigro-fuscis, pileo ferrugineo notato, et capite reliquo ochraceo-cervino: collo postico et dorso antico fuscis, saturatè fusco et albo variegatis: dorso reliquo et scapularibus nigricantibus viridi et purpureo nitentibus et ferrugineo vel castaneo notatis: corpore suprà utrinque conspicuè ochraceo striato: uropygio nigro, purpureo lavato: remigibus nigricantibus, remige extimo in pogonio externo ad basin griseo-albo, secundariis intimis saturatè ferrugineo marginatis et notatis: tectricibus alarum cinereo et rufescenti-cinereo marginatis: rectricibus nigricantibus, ferrugineo notatis et marginatis, rectricibus centralibus elongatis: mento et gulâ supremâ albis, capitis lateribus albidis vix fusco et rufescenti-fusco notatis: gutture, pectore et hypochondriis griseo-cervinis vix rufescenti-fusco adumbratis et fusco notatis: corpore reliquo subtùs albo, subcaudalibus fusco striatis: rostro nigro-fusco, ad basin flavo-carneo: pedibus grisescentibus vix viridi tinctis: iride fuscâ.

*Adult Male* (near London, March). A stripe from the centre of the base of the upper mandible broadening till it covers most of the crown and nape, a stripe above each eye to the nape, and the lores blackish

brown, the crown marked with deep rufous; rest of the head yellowish buff; hind neck and fore part of the back wood-brown, variegated with dark brown and white; rest of the back and scapulars blackish, richly glossed with green and purple, and marked with deep ferruginous or chestnut-red, the feathers on each side broadly margined with pale ochreous, forming conspicuous lateral stripes; rump black, glossed with purple; quills blackish, the first quill with the outer web greyish white on the basal half; inner secondaries margined and mottled with deep rufous; wing-coverts margined with rufous grey or dull greyish; tail blackish, margined and mottled with deep rufous, the central rectrices elongated; chin and upper throat white; sides of the head white, slightly marked with dark brown and rufous brown; a stripe passes from the base of the lower mandible below the eye to the nape, lower throat, breast, and flanks greyish buff, slightly clouded with reddish brown, and marked with dark brown; rest of the underparts white; the under tail-coverts striped with brown; bill at the base yellowish flesh-coloured, becoming black towards the tip; legs greyish, tinged with green on the joints; iris dark brown. Total length about 7·5 inches, culmen 1·7, wing 4·25, tail 1·9, tarsus 0·95.

*Adult Female.* Undistinguishable from the male in plumage, except that, perhaps, it is a trifle duller in coloration.

*Adult in winter* (Turkey, 16th January). Differs from the adult in summer dress merely by having the upper parts less richly glossed with purple and green.

*Young in down* (Muonioniska, July 1872). Entire upper parts richly varied deep rufous and black, and dotted here and there with white; a buffy white streak passes from the forehead over the eye; below this is a dark brown streak covering the lores to the eye; from the base of the lower mandible another white streak passes below the eye, and one also from the chin (which is buffy white) along the side of the head to the nape; underparts dark reddish brown, slightly varied with blackish brown; bill and legs much developed.

Throughout the whole of Northern Europe and Asia the present species is tolerably widely distributed throughout the breeding-season, migrating southward at the approach of winter. It is, however, only known to breed in the high north; and though it has been stated to have nested in Great Britain, Holland, and Germany, yet proof of its having done so is as yet wanting, and it may well be doubted if this bird has ever remained to breed so far south as in any of these countries. With us in Great Britain it is strictly a winter visitant, not so numerous as the common Snipe, and is found throughout the country in suitable localities. It arrives in England usually in October, and leaves again in March; but there are many instances of it having been met with earlier and later than these dates: thus Mr. Stevenson says that he has seen a couple shot on the 14th September, and that Mr. Lubbock saw one killed on Barton Fen on the 1st of August; but the larger proportion arrive in England in October, in which month and in November they are usually most numerous with us. It is a hardier bird than the common Snipe, and may sometimes be seen in weather so cold that the common Snipe has been driven away. It leaves our shores in March, but sometimes remains later. Mr. Harting has seen it in Sussex as late as the 14th April; and Mr. Stevenson says that it is "by no means unusual to observe Jack Snipe hanging for sale in the Norwich market between the first and second week in April, and in cold backward seasons as late as the 24th, or even into the following month." Professor Newton informs me that he has flushed a Jack Snipe in Norfolk on the 4th of May.

Mr. Hancock says that it is an autumn and winter visitant to Northumberland, arriving in October and departing in spring, and is less numerous than the common Snipe. In Scotland, Mr. Robert Gray writes (B. of W. of Scotl. p. 313), "it is found in nearly the same localities as the common Snipe, both in the Hebrides and on the mainland, but is never seen congregating in numbers at any season. In Skye, Islay, Jura, Iona, and Mull, and in nearly all the islands of minor extent, it is found in small groups in the marshes; and even in districts thickly populated it regularly appears, small parties being observed every winter on the shootings in the immediate neighbourhood of Glasgow. I find the Jack Snipe nowhere more common than in Forfarshire. From some of the marshes in the neighbourhood of the county town I have obtained six or seven brace in the course of a short turn with the dogs. On the west coast these birds arrive early in October, and are nearly all gone about the beginning of April; but in the island of North Uist single birds have been flushed and shot as late as the second week in June." Mr. Gray refers also to instances in which it has been said to have nested in Scotland; but, so far as I can gather, there is no authentic instance of its nest having really been found there.

In Ireland, it is stated by Thompson (B. of Ireland, ii. p. 278) to be common from about the 1st October to the end of March; and he adds that he was assured by Mr. Jackson, a gamekeeper, that it bred near the town of Ballyhannis, co. Mayo, in 1834. According to Macgillivray the proportion of the present species as compared with the common Snipe is about one to ten, whereas in Ireland the Jack Snipe is much more numerous, the proportion being about one to four.

Though not found in Greenland, Iceland, or the Færoes, the Jack Snipe is tolerably common in Scandinavia. Mr. R. Collett says that it breeds here and there in Norway, from the extreme northern districts down to below the Dovre, but is most frequently met with during the summer north of the arctic circle, as in Lofoten, at Bodö, Tromsö, and in East Finmark. Dr. Printz found it breeding in June 1862 in Valders. In the autumn, spring, and winter it is not unfrequently met with in the southern portions of Norway, both near the coast and in the interior. Professor Nilsson says that it is found throughout Sweden, but nowhere as numerous as the common Snipe. He adds that it is said to breed in Southern Sweden, but this appears doubtful. It arrives in the vicinity of Lund late in March, and leaves for the north in the first half of April, the males arriving first, and their mates following about a week later. In the autumn they first appear about the middle of November, and till the early part of December they keep dropping in. A few remain in Central and Southern Sweden throughout the winter, the rest passing further south. In Finland, Dr. Palmén says, it is found in most parts of the country, more frequently in the southern and eastern portions than in the west, and breeds in the north. To this I may add that I have its eggs, taken near the Ijå river, north of Uleåborg. It arrives in Finland early in May, and leaves in September and October. It is stated to be common and to breed near Archangel; but Messrs. Seebohm and Harvie-Brown did not meet with it on the Petchora river, in Northern Russia. Mr. Sabanäeff informs me that it breeds in many parts of the interior of Russia, as for instance in the Governments of Jaroslaf, Vladimir, and Tver; and Professor Kessler states that a brood of young Jack Snipes was found in the Orloff Government. Mr. Sabanäeff never observed it on the eastern slope of the Ural in the summer; but according to Hoffmann it breeds in the northern portion of the Perm Government, at the head-waters of

the Petchora. During the spring passage it was not numerous; but he observed it in the south-eastern portions of the Ekaterinburg district. Eversmann states that it is common in the Ural during passage, also in the Kazan, Ufim, and northern parts of the Orenburg Governments. Meshakoff says that it breeds in the Vologda Government. According to Borggreve it is found throughout North Germany up to an altitude of 2000 feet above the sea-level, but most certainly does not breed there. Professor Kjærbölling, however, states that it breeds, though rarely, in Denmark, where it is usually found on passage in April and September, some remaining throughout the winter in mild seasons. It is, he says, less numerous than the common Snipe, but more so than the Double Snipe.

According to Professor Schlegel it occurs in Holland in April and May, and again in August and September. He says also that it has bred there; but this is doubtless an error. In Belgium the Jack Snipe is common at the two seasons of migration; and the same may be said as regards its occurrence in France. Mr. Adrien Lacroix states that it is a winter visitant to the French Pyrenees; Professor Barboza du Bocage records it as being very common in Portugal; and it is also common in Spain during the cold season. Colonel Irby writes (Orn. Str. Gibr. p. 174):—"On the Spanish side of the Straits of Gibraltar the Jacksnipe is generally distributed throughout the winter, and is extremely numerous about some favourite black muddy spots at Casa Vieja, and in the 'ojos,' or land springs, at the edges of the marisma; but it is by no means so plentiful as the common Snipe. Towards the end of February Jacksnipes assemble together very much; and this gathering of them is a sure prelude to the general departure of most of the Snipes for the north. The greatest number of the present species that I ever saw anywhere was in some of the 'ojos' westward of Coria del Rio, near Seville; these circular spots, about ten yards in diameter, are very muddy and sparingly covered with short sedge. Many of them held fifteen or a dozen Jacksnipe; and the oft-cited but imaginary individual who is said to have found a single Jacksnipe afford him sport for months, until his friend unluckily killed it, would here, indeed, have been in happy hunting-grounds." In Savoy the Jack Snipe arrives somewhat later than the common Snipe, and is usually most abundant in November; and, according to Salvadori, it is found throughout Italy from the autumn to the spring, though in smaller numbers than the common Snipe; and in Sicily and Sardinia it is abundant during the winter, especially about the southern marshy districts of the former island. Mr. C. A. Wright records it as tolerably common in Malta in March and again in October and November; and Lord Lilford states that in the Ionian Islands it is common, but less so in proportion to the common Snipe than in any other country he has visited.

Dr. Krüper says that it is found throughout the winter in wet fields and swamps throughout Greece, leaving for the north again in March. Erhard met with it on the Cyclades during passage; Colonel Drummond-Hay says that it is not common in Macedonia, and that it appears in the Ionian Islands about the 1st of November. I am informed by Messrs. C. E. C. Newton and Hanbury-Barclay that in Albania it is rather more numerous than in England, being in the proportion of about one to four of the common Snipe. In the winter of 1869–70, the former gentleman writes, "Jack Snipe were at the rate of three to one of the full species on the Butrinto marsh, and the Duke of Hamilton and Mr. D. Baird, with whom I was shooting, would not go out, as they were so tame." Lord Lilford, who met with it in Crete, says that in

1875 he was somewhat surprised to find several in a small marsh at the head of Suda Bay so late as April. In Southern Germany it is a migrant and winter visitant. The late Mr. Seidensacher informs me that it occurs sparingly on passage near Cilli, in Styria, and a few remain there throughout the winter.

Dr. Anton Fritsch says that it is not so numerous in Bohemia as the common Snipe; and he adds that it "breeds commonly in the peat-mosses of the Böhmerwald"—which must certainly be an erroneous statement. In Austria and Transylvania it is tolerably numerous on passage; and Messrs. Elwes and Buckley say that it is common in some parts of Turkey. According to Professor von Nordmann it appears on passage in Southern Russia, and sometimes remains till May; it is also recorded as common in marshy localities near Smyrna, in Asia Minor; Canon Tristram met with it in Palestine; and it is found in North Africa. According to Von Heuglin it visits the lagoons of Lower Egypt in the autumn and winter; and he met with it there as late as May. Brehm and Vierthaler observed it in December on the Blue Nile. Captain Shelley obtained it near Dendera as late as the 12th of March; and Mr. J. H. Gurney, jun., records it as very plentiful in the marshes at Damietta, being more numerous in proportion to the common Snipe than in England. In Algeria it is found during winter, arriving with the common Snipe; and, according to Favier (Col. Irby, *l. c.*), it is "nearly as common in the winter months around Tangier as the common Snipe, arriving during November and departing northwards in February." It is stated in error to be found in the Canaries; for, according to Mr. Godman, only the common species occurs there; and I find no record of its occurrence elsewhere on the African continent except in the north. In Asia it breeds in the northern districts, migrating southward during the winter. Mr. Blanford says that it is generally distributed in Persia, in suitable localities, during the winter months; and Dr. Jerdon writes (B. of Ind. ii. p. 676) that it is generally diffused throughout India, preferring thicker coverts than the common Snipe, lying very close, and difficult to flush. Now and then considerable numbers will be met with; in other places it is rarely seen. It makes its appearance later than the common Snipe, and departs earlier. Colonel Irby found it in Oudh and Kumaon, during the cold season, wherever the common Snipe occurred, but not in such numbers; and it has been recorded by Mr. Layard, on "sportsman's authority," as found in Ceylon; but Mr. Holdsworth did not meet with it there. Dr. Severtzoff records it as occurring in Turkestan on passage; Von Middendorff found it breeding on the Boganida, 70° N. lat. The first were observed on the 8th June; and the last was shot on the 31st August (O. S.). Dr. G. Radde met with it, on the 16th June 1859, when wandering through the Alpine moss-tundras in the Sajan Mountains, close to the Iltschir lake, but never observed it elsewhere in Siberia. Père David was told that it had been killed once or twice at Pekin; but Mr. Swinhoe says that he has never seen it in China. One was procured by a sporting friend in Formosa, and sent to him as the only one he had ever met with in that part of the world. It is not included by Temminck and Schlegel in the 'Fauna Japonica;' but Mr. Whitely (Ibis, 1867, p. 206) obtained one from a native birdcatcher at Hakodadi, in Japan, on the 3rd October, 1865, this being, he adds, the only specimen he ever saw there.

In habits the Jack Snipe differs in many respects from its allies, but resembles the common Snipe perhaps more than any other. It is less shy than that bird, and lies closer, usually not rising until nearly trodden on; and when it flies off it does so without uttering a sound, flying in

a zigzag line until it has traversed some distance, when it shoots high up in the air, but soon alights, dropping down almost like a stone. Its flight is light and wavering, almost Bat-like, but swift; and it turns and twists on the wing with the greatest ease. During the daytime it remains carefully concealed, and will allow any one to pass close to it without attempting to move; but as soon as the evening sets in, it becomes more active, and soon commences to move about in search of food. It is probably more active in the evening and early in the morning than at any other time of the night; and I am unaware if it is on the move throughout the night, except when the moon gives a full clear light. Like its allies it feeds on small insects, worms, &c., which it obtains chiefly by probing or boring in the soft soil; but as these birds are generally shot during the daytime, when the contents of the stomach are partially digested, it is hard to determine, with any degree of precision, on what they have been feeding. Naumann says that he has found small grass-seeds in the stomachs of Jack Snipes too often to believe that they were swallowed by chance only.

It is probably because the Jack Snipe is so hard to flush that it has been said by several good authorities to be solitary; for I fully agree with Mr. Stevenson, who says that, although single birds may be found here and there, a careful search would probably discover one or more close by; and he could, he adds, give instances of their being found in numbers almost exceeding the largest flights of the common Snipe. Colonel Irby also, as above stated, says that in Spain he has found a dozen or fifteen Jack Snipes in one small marshy patch; and many other observers speak of several being found together in one place.

Mr. Wolley appears to have been the first naturalist who obtained trustworthy information respecting the nidification of the Jack Snipe; and to him collectors were first indebted for authentic eggs of this species. Mr. Hewitson gives (Eggs Brit. B. ii. p. 356) the following notes respecting the nidification of this species, communicated to him by Mr. Wolley:—"I scarcely like to tell you about the Jack-Snipe, any thing I can say must be so poor an expression of my exultation at the finding of this long-wished-for egg. It was on the 17th June 1853, in the great marsh of Muonioniska, that I first heard the Jack-Snipe, though at the time I could not at all guess what it was,—an extraordinary sound, unlike any thing I had heard before; I could not tell from what direction it came; and it filled me with a curious surprise. My Finnish interpreter thought it was a Capercally, and at that time I could not contradict him; but soon I found that it was a small bird gliding at a wild pace at a great height over the marsh. I know not how better to describe the noise than by likening it to the cantering of a horse in the distance, over a hard, hollow road; it came in fours with a similar cadence, and a like clear yet hollow sound. The same day we found a nest which seemed to be of a kind unknown to me. The next morning I went to Kharto Uoma with a good strength of beaters. I kept them, as well as I could, in a line,—myself in the middle, my Swedish travelling companion on one side, and the Finn talker on the other. Whenever a bird was put off its eggs, the man who saw it was to pass on the word, and the whole line was to stand whilst I went to examine the eggs and take them at once, or observe the bearings of the spot for another visit, as might be necessary. We had not been many hours in the marsh, when I saw a bird get up, and I marked it down. . . . . The nest was found. . . . . A sight of the eggs as they lay untouched raised my expectations to the highest pitch. I went to the spot where I had marked the bird, put it up again, and again saw it, after a short low flight, drop

suddenly into cover. I fired! and in a minute had in my hand a true Jack-Snipe, the undoubted parent of the nest of eggs! As usual, I took measures to let the whole party have a share in my gratification before I again gave the word to advance. In the course of the day and night I found three more nests, and examined the birds of each. One allowed me to touch it with my hand before it rose; and another only got up when my foot was within six inches of it. It was very fortunate I was able to identify so fine a series of eggs; for they differ considerably from one another. I was never afterwards able to see a nest myself, though I beat through numbers of swamps. Several with eggs hard sat upon were found by people cutting hay in boggy places in July. I have spent a good many hours this present year (1854) in the same Kharto Uoma without finding one, though I had plenty of men and boys in good working order. There have certainly been but few Jack-Snipes in the country this season. The nest of the 17th and the four of the 18th June were all alike in structure, made loosely of little pieces of grass and *Equisetum* not at all woven together, with a few old leaves of the dwarf birch, placed in a dry sedgy or grassy spot close to more open swamp. . . . . It was not long after I heard it that I ascertained that the remarkable hammering noise in the air was made by the Jack-Snipe."

Professor Newton sends me the following continuation of Mr. Wolley's notes, not given by Mr. Hewitson, copied from his original letter, which is now in Professor Newton's possession:— "But I have never yet quite satisfied myself whether the *keet koot, keet koot* on the ground, and the *baa-aa-aa* in the air, which are constantly to be heard in the same places, are made by one and the same bird at different times. At a considerable height it is not easy to distinguish a Jack from another Snipe, and the clicking and bleating seem to my ears exactly like the Common Snipe's. However I did not find a single nest of the latter bird in Iso or Kharto Uoma, though I have met with one or two elsewhere in the neighbourhood. Few of the country people recognize two kinds; they consider that all the sounds proceed from the same bird—the 'Ram of the heavens.' They take them for signs of the weather, or they adapt them to words pretending to be lamentations of transmigrated girls who have died in their maidenhood and are bewailing their hard fate; but the lads generally get the worst of it in a trial of wit with their fair companions."

The eggs of the Jack Snipe are, compared with the size of the bird itself, disproportionately large; and Mr. Hewitson, in calling attention to this curious fact, remarks that whereas the bird itself weighs about two ounces, the four eggs weigh more than an ounce and a half; and I may also add that the young bird in down looks disproportionately large against its parent.

Eggs of the Jack Snipe in my collection, from North Finland and Lapland, the latter obtained by Mr. Wolley, vary somewhat in markings; and though in general character and coloration they resemble those of the common Snipe, they run into richer varieties than those of that bird, and are less in size, averaging $1\frac{22}{40}$ by $1\frac{2}{40}$ inch.

The specimens figured are the adult bird in spring dress, and the young bird in down, above described.

In the preparation of the above article I have examined the following specimens:—

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*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Near London, March 30th, 1870 (*Davy*). *b*, ♀. Near London, September 25th, 1871 (*Davy*). *c*. Pevensey, Sussex, September 26th, 1860 (*H. E. Dresser*). *d*, ♂. Leiden, Holland, October 24th (*Sala*). *e*, ♂ *juv.* (in half down). Muonioniska, Lapland, August 1870. *f*, *pull.* Muonioniska, July 1872 (*Meves*). *g*. Albania (*H. Barclay*). *h*, ♂. Khathane, Turkey, January 16th, 1870 (*Robson*).

*E Mus. Howard Saunders.*

*a*, ♀. Malaga, February 2nd. *b*, *c*, ♀. Valencia, March 10th. *d*, ♂. Granada, April. *e*, ♀. Valencia, December 3rd (*Martin*).

*E Mus. E. Hargitt.*

*a*, ♂, *b*, ♀, *c*, ♀. Havre, October, November, and December (*V. Pluche*).

